DOCUMENT RESUME

ED 459 092 SO 033 039

AUTHOR	Hilton, Lewis B., Ed.
TITLE	Missouri Journal of Research in Music Education, 1967-1971.
INSTITUTION	Missouri State Dept. of Education, Jefferson City.
PUB DATE	1971-00-00
NOTE	520p.; For other issues of this journal, see SO 033 038-049. Some text may not reproduce well. Published annually.
AVAILABLE FROM	Editor, Missouri Journal of Research in Music Education, University of Missouri-Kansas City, Conservatory of Music, 4949 Cherry Street, Kansas City, MO 64110-2229.
PUB TYPE	Collected Works - Serials (022)
JOURNAL CIT	Missouri Journal of Research in Music Education; v2 n1-5 Aut 1967-Aut 1971
EDRS PRICE	MF02/PC21 Plus Postage.
DESCRIPTORS	Applied Music; *Classroom Techniques; Curriculum Development; Elementary Secondary Education; Higher Education; *Music Activities; *Music Education; *Music Teachers; *Scholarship
IDENTIFIERS	*Missouri; Music History

ABSTRACT

This journal is devoted to the needs and interests of the school and college music teachers of Missouri and the United States. Articles in Volume 2, Number 1 are: "Progress Report on the Action Research Project in the Schools of Missouri" (D. Anderson); "Tension and Motion as Factors in Expressive Conducting" (J. A. Labuta); "Programmed Instruction and Music Education" (R. Hutcheson); "Factors Influencing the Choice and Pursuance of a Career in Music Education" by A. Zimmerman (reviewed by E. Burgstahler); "The Development and Use of the Renaissance Trombone" (J. Nicholson); "A Study of the State Music Festivals in Missouri from 1959 to 1966" (M. O. Johnson); and "Taste, Music, and Education" (J. G. Faulkner). Articles in Volume 2, Number 2 are: "Progress Report on the Action Research Project in the Schools of Missouri" (F. B. McCurry); "Notes on Musical Taste" (C. A. Roeckle); "Music Reading" (Y. B. Pierce); "The Use of Notated Examples in Fifth Grade Music Appreciation Class" (H. Oberdin); "Ramos and Some Polemic Theorists of the Renaissance" (R. C. Jones); "Individualized Instruction for General Music Classes Involving the Use of Slides Projected in Synchronization with Pre-recorded Tape" (L. B. Hilton); "Pilot Experimental Programs for Developing High School Ensemble Music Classes (Band, Orchestra, Chorus) into Courses Representing an Academic Discipline" (A. W. Bleckschmidt; P. J. Newell); and "Reviews of Dissertations" (J. Galloway; F. B. McCurry; M. O. Johnson). Articles in Volume 2, Number 3 are: "Wind Instruments in the Seventeenth Century" (R. Coleman); "The Emergence of the Public Concert" (P. Rueb); "A Study of the Relation between the Objectives and Subjective Measurement of the Quantitative Differences in Tone Quality among Various Makes of Clarinets" (R. Warner); "An Application of Certain Learning Theories to the Teaching of Musical Rhythm" (J. Milak); "An Experiment in Programming Rudiments of Music for Fifth Grade Students Compared to Conventional Instructional Methods" (R. Wardenburg); and "Dissertation Abstracts" (n=8). Articles in Volume 2, Number 4 are: "Research in Music Education: Functions and Constraints" (H. Cady); "The Black Musician in American Society" (T. Brooks); "Selected Conditions Associated with the Mobility of Missouri Secondary Public School Music Teachers" (W. H. Bodanske); "A Selected List of

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Art Songs in French" (E. C. Cramer); "The Evolution of Symphonic Instrumentation in the Nineteenth Century" (D. V. Joseph); "The Integration of Music Learnings in the Junior High Choral Class" (R. H. Ball); "A Summary of the Evolution and Development of the Cadenza in the Violin Repertory through the Use of Examples" (J. A. Ozipko); and "A Study of the Relationship of Singing Accuracy to the Pitch-Making Abilities of Eighty-one Subjects (Dissertation Abstract)" (I. C. Powell). Articles in Volume 2, Number 5 are: "Research in Action: The Transfer of Research in Music and Music Education into the Classroom" (J. R. Stephenson); "Programmed Instruction and Music Education" (D. L. Turpin); "Music Education and the Blind" (J. T. Gagnepain); "Improved Teaching through the Use of the Videotaperecorder" (P. D. Rodabaugh); "Development of a Methodology for Transcribing the Organ Music of Bach for Band" (J. M. Burk); "Humanities, Integrated Arts, and Aesthetic Education" (W. D. Gaver); and "Dissertation Abstracts" (n=7). (BT)

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ED 459 092

Missouri Journal of Research in Music Education, 1967-1971

Lewis B. Hilton, Editor

Volume 2, Numbers 1-5

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Missouri Journal of Research in Music Education

AUTUMN 1967
Volume 2 Number 1

STATE DEPARTMENT OF EDUCATION
Hubert Wheeler, Commissioner
Jefferson City, Missouri

MISSOURI JOURNAL OF RESEARCH IN MUSIC EDUCATION

Published by the Missouri State Department of Education

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MISSOURI JOURNAL OF RESEARCH IN MUSIC EDUCATION

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N.B. All contributors are advised to keep a copy of any manuscript submitted. The Editorial Committee can not be responsible for loss of manuscripts.

PREFACE

The Missouri Journal of Research in Music Education, published as a Bulletin of the State Department of Education, is devoted to the needs and interests of the school and college music teachers of Missouri and the nation. This issue, Volume II, Number 1, is the sixth to appear in as many years.

The members of the Editorial Committee are grateful to those readers who have written suggestions concerning the content of past issues and request that criticisms and suggestions, always welcome and never unheeded, again be sent to the Editor concerning the content of this issue. We strive for a reasonable balance between music theory, history, philosophy or aesthetics, and pedagogy. It is difficult to judge how successful we are without reader response.

The contributions of M. O. Johnson and Don Anderson, continuations of articles published in Volume I, Number 5, are especially pertinent to the immediately practical concerns of school music teachers. Mr. Anderson's article also suggests the increasing interest of the Missouri Music Educator's Association in the sponsorship of and involvement in "action research."

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Copies of this journal are obtainable without charge from the Missouri State Department of Education. —The Editor.

ACTION RESEARCH PROJECT

PROGRESS REPORT

Donald Anderson

Brentwood Public Schools

The Missouri Editorial Committee and the Action Research Committee met on May 12, 1967 to consider the project applications for 1967-68 that had been received.

Members of the committee were pleased with the types and number of projects received and gave favorable review to projects.

"Student As Teacher" was submitted by Herbert Duncan, Normandy School District. Mr. Duncan said his project is to determine if capable high school students could help teach elementary and junior high school students.

Mrs. June Barton, Clayton School District, submitted "Programmed Listening Material for the Upper Level Elementary Children." The purpose of her project is to provide opportunities for children to listen on their own, but with direction students will be allowed to move at their own rate of speed, to reinforce hearing concepts, and to aid in verbalizing.

Mary Lee Burnett and Glenda Brisco of Ladue School District submitted "Allied Arts in the Fifth and Sixth Grades." The purpose of this project is to show the relationship of music and art and the characteristics they have in common.

Deanna Marshall of Eldon School District submitted a tape test, "Fun With Music," which is to see if a test can be made an enjoyable and valid evaluation tool.

Jerry McLain from Weaubleau School District submitted "Source of Motivation of Music Students in the Public Schools." Mr. McLain would like to discover how students are motivated to take music courses in the public schools with a view to improving and augmenting these sources of motivation and improving the quality and status of public music education.

The Action Research Project Committee is requesting that two progress reports be made during the year and that a final report be submitted May 1, 1968.

TENSION AND MOTION AS FACTORS IN EXPRESSIVE CONDUCTING

Joseph A. Labuta

Central Methodist College

Every conductor should be vitally concerned with the expression or meaning of the music he is performing. He is the interpreter, the recreative musician, who must assimilate the work of the composer and present it through his musicians to the listening audience. According to Bruno Walter, the conductor has the responsibility of communicating the music strongly and convincingly in a meaningful and feelingful performance.[1] However, relatively little bibliography is available to the neophyte conductor concerning interpretation and expression, although the mechanical and technical aspects of conducting are thoroughly covered in the literature. The nature of musical expression is investigated in this paper in order to delineate pervasive principles of interpretation relevant to instrumental conducting.

Theory

Musicians have long known, or instinctively felt, that intensity and movement are central to musical meaning, expression and interpretation. Such master teachers as Lussy, Matthay, Christiani, and more recently, VanderCook have attempted to codify specific principles of expression.[2] Their resulting rules are stated in terms of "progression" or "movement," and "emphasis," "spacing" or "accentuation" of "exceptional" or "unexpected" notes.

The phenomenon of tension in music has been a frequent subject of contemporary essays and treatises in the disciplines of aesthetics, psychology of music, and music education, also. Theories of expression structured upon music's tensional properties have been posited by several scholars in these various fields of learning.[3] Although it is untenable logically to arbitrate the many viewpoints expressed by these writers, an eclectic approach yields a comprehensive theory of pragmatic value to the conductor. In general, this theory states that music is significant or expressive because the forms of music are similar to the forms of human feeling. The rationale may be interpreted as follows: All that we experience is accompanied by some degree of feeling. Also, the pattern or structure of human feeling is cyclic, fluctuating between tension and the resolution of tension. Put in the simplest terms, we all have our ups and downs, frustrations and successes, disappointments and windfalls, good days and bad days.

Similarly, music can be defined as perceived tonal movement through patterns of tensions and resolutions. Or, to paraphrase Hanslick, music presents forms of intensity to release in tonal motion. These patterns are isomorphic to the life of human feeling. Thus, music's movement through patterns of intensity and release is expressive of the movement of man's experience through actual psychological and physiological tensions and resolutions. Movement-repose, rise-fall, struggle-fulfillment, tension-resolution are antithetical terms used to describe what happens in both music and life.

Expressive Elements

The conductor must be aware that any element of music that contributes to its tension and motion is expressive. His job is to emphasize subtly these elements in his interpretation.

More specifically, musical constancy defines the style or mood of a composition. This includes steady tempo, stable dynamic level, unchanging tonality and mode, standard or expected harmonic progression, consistent texture, etc. However, the conductor must attend to the fluctuations and nuances found within the more pervasive style or mood framework. These structural elements give rise to the undulating tonal tensions of musical expression:

- Fluctuations of pitch
  - tonal-melodic stress and direction
  - the rise-fall of the normal melodic curve

- Fluctuations of tempo
  - rubato and agogics
  - accelerando
  - ritardando

- Fluctuations of tonality
  - modulation
  - chromaticism

- Degree of dissonance to consonance
  - harmonic tensions

- Movement to cadence
  - harmonic progression
  - slight tempo variation
  - agogic accentuation

Dynamic accentuation

Gradual dynamic change (nuance)
  follows normal rise-fall melodic curve
  crescendo-dimenuendo

Changes in texture and instrumentation

The dramatic situation is developed and intensified by inhibition, thwarting of the expected, deviation from the norm and ambiguous or structurally undefined passages. The standard devices of development are also intensifying, e.g., imitation, fragmentation, free counterpoint, motivic sequences, modulation, dissonance, and contrast.

While it is necessary to capture the pervasive mood framework by correct tempo, dynamic level, etc., the evolving developmental character of the music must receive most attention if expressive performance is to be realized. The conductor guides and controls the musical line through patterns of tension and resolutions, shaping tempo and phrase, and in general responding to the expressive elements and structure listed above.

Expressive Analysis

Score analysis is needed at this point since structure is the key to valid interpretation. The analysis is not the type, however, that is usually required for a *Form and Analysis* class assignment. Yet, knowledge of music theory is utilized fully. The conductor must locate cadences to identify phrases; analyze phrase types to determine appropriate phrase movement; identify the large formal design; locate points of emphasis and climaxes; perceive the dynamic plan of the work and subtle shadings; discern germinal ideas and their development; analyze types of harmonic progression and tensional uses of dissonance.

The analytical approach, then, should emphasize the dynamic, evolving, expressive function of the musical structure, rather than the static formal characteristics of external design.[4]

Expressive Conducting

Expressive conducting involves modifications so slight that in most cases they are not consciously noticed by the listener, but only "felt." Phrase climaxes are pointed up by emphasizing the stress or climax notes and by the smaller give and take of the tempo and dynamic shadings. Phrases are moved to cadential points of repose in a "push on" or "hanging" movement depending upon the position of the climax notes. Intensity is generated toward them and released to the phrase ending.

The larger musical structure is composed of progressions of phrases that move toward a final cadential goal. Each phrase builds up tension which is released or partially released at the successive less terminal cadential points. The process is cumulative. Each phrase has meaning in itself, as described above, but it also points forward and relates backward musically. As a result the conductor must concern himself equally with the modifications of dynamics, tempo, and accentuation of both the smaller and the larger architectonic levels. As in the phrase, accelerandos and ritardandos are frequently used in larger sections to give an even freer expression. Also, sequential building toward a sectional climax and its subsequent falling away can be equated to smaller phrase structure.

In general, interpretation of the complete composition involves locating important cadential points, and moving the ongoing musical line through to these points while emphasizing relationships, deviations, contrasts and climaxes by modifications of tempo, stress and dynamics, whether they are indicated by the composer or not.

Conducting and Feeling

The conductor is expected to conduct expressively and feelingfully — not mechanically. This has little to do, however, with the way he as a conductor feels. It has everything to do with the feeling the conductor brings from the score — the expression implied in the notes. He must respond to the expressive elements and structure. This response is feelingful in the sense of motion or kinaesthesis, rather than emotion as it is usually connoted. The feeling is perceived in the music itself, or more specifically in the musical score as it is read or remembered if it has been memorized previously. The conductor also "feels with" the music as he conducts it. That is, the feeling he perceives in the music symbols is expressed through him, through his inner physiological system as well as his conducting gestures. This inner feeling reinforces his outer gestures and makes them expressively convincing.

For example, in a melody the tonal tendencies, stresses and inhibitions are felt as muscular pulls or strains. Each tendency seems to demand an adjustment of the musculature. Similarly rhythmic stresses as normal beat accents or larger rhythmic groupings are bodily felt.[5] Dissonance, too, is felt as muscular tension, and the resolution of dissonance as muscular relaxation. These disturbances are psychological as well as physiological.

Thus, feelings are aroused by the music. Tendencies, stresses, inhibitions and ambignities of the musical line are literally felt by the conductor. They are felt as muscular and visceral tensions, yet are not really emotions. The conductor must use physical gestures of the hand and body to convey to his group the expression or feeling that he perceives in — or more accurately, feels with — the score.

Conclusion

The conductor's technique includes anticipating and exemplifying the movement and tensions of the composition's expressive form as presented by the musical symbols in the score, by means of the most meaningful and concise gestures possible for him.

REFERENCES

1. Walter, Bruno, *Of Music and Music Making*. Trans. Paul Hamburger. New York: W. W. Norton and Co., Inc., 1961, p. 29.

2. Lussy, M. Mathis, *Musical Expression*. London: Ewer and Company, 1892.
Matthay, Tobias, *Musical Interpretation*. Boston: Boston Music Company, 1913.
Christiani, Adolph L., *The Principles of Expression in Pianoforte Playing*. Philadelphia: Theodore Presser Co., 1885.
VanderCook, H. A., *Expression in Music*. Chicago: Rubank, Inc., 1942.

3. Ferguson, Donald N., *Music as Metaphor*. Minneapolis: University of Minnesota Press, 1960.
Furtwaengler, Wilhelm, *Concerning Music*. Trans. L. J. Lawrence. London: Boosey and Hawkes, 1953.
Langer, Susanne, *Philosophy in a New Key*. New York: New American Library, 1942.
Leonhard, Charles and Robert W. House, *Foundations and Principles of Music Education*. New York: McGraw-Hill Book Co., 1959.
Meyer, Leonard B., *Emotion and Meaning in Music*. Chicago: University of Chicago Press, 1956.
Sessions, Roger, *The Musical Experience*. Princeton: The Princeton University Press, 1950.

4. Reti, Rudolph, *The Thematic Process in Music*. New York: Macmillan Company, 1951.

5. Lundin, Robert W., *An Objective Psychology of Music*. New York: The Ronald Press, 1953, pp. 66-69 and pp. 109-111.

PROGRAMMED INSTRUCTION
and
MUSIC EDUCATION

Robert J. Hutcheson, Jr.

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INTRODUCTION

In 1966, a survey undertaken by Leonard Dallin[1] revealed that 107 out of the 444 college level music departments who responded were currently using programmed materials in music. In addition, 163 reported they planned to adopt such a mode of instruction.

Another report[2] showed the change between 1954 (when teaching machines received a new impetus) and 1962 (when the report was written). From a situation in which virtually no teaching machines or programmed materials were commercially available, eight years of research had produced over 80 teaching machines and almost 300 programs for educational curricula. The major productive efforts given to the interests of music education and resulting in published programs actually began approximately two or three years before the report was written.

William McBride,[3] in the foreword to one of the presently available programmed music texts, stresses the debt programmed instruction owes to traditional methods:

> The concept of programmed instruction, which has begun to permeate American education at all levels, is not new, but rather a precise organization of some of the best approaches to learning that successful teachers have used for many years. What is both new and highly encouraging is the increasing desire on the part of some music educators, as well as teachers in other fields, to reexamine methods and materials in terms of primary objectives. The application of programmed instruction to the teaching of music is a step both logical and productive, which is among those factors helping to form some exciting new directions for music education in this country.

Thorndike[4] foresaw, or at least hoped for, such a development as early as 1912:

> If, by a miracle of mechanical ingenuity, a book could be so arranged that only to him who had done what was directed on page one would page two become visible, and so on, much that now requires personal instruction could be managed by print . . . A human being should not be wasted in doing what forty sheets of paper or two phonographs can do. Just because personal teaching is precious and can do what books and apparatus can not, it should be saved for its peculiar work. The best teacher uses books and appli-

ances as well as his own insight, sympathy, and magnetism.

As we will see in discussing what has been done in the field and what many predict will occur, our present knowledge is by no means completely systematic, and many basic issues are in a stage of debate and experiment. In spite of its date, the following quotation seems especially true in reference to applications made by music educators.

> Programming refers to the arrangement of material to be learned in the order of presentation which will tend to provide a maximum rate of acquisition and retention. It is still an infant art and there is much research work to be done before programming can be considered a science.[5]

But, simply because our experience with the new tool is so limited, much of what has been written and done is highly significant. We will endeavor to present some of this work.

PROGRAMMED LEARNING

Historical Introduction:

The Socratic dialogues of ancient Greece point toward future developments in spite of some essential differences. "Sons of aristocrats and slaves were led step by easy step through statements that constructed enthymemes and syllogisms, getting cues from leading questions, giving responses in a permissive atmosphere, and gaining immediate feedback."[6] Jerome Bruner's famous dictum that "any subject matter can be taught to anybody at any age in some form that is honest" was anticipated in the Socratic dialogue as a method of arriving at truth. Programmed learning applies both the tutorial (Socratic) method of teaching by questions and the Cartesian method of breaking course materials down into small pieces arranged in an hierarchic order. The method differs fundamentally from the expository lecture techniques at the heart of audiovisual instruction *via* sound film, television, etc.

Information about some non-programmed devices also survives. H. Chard[7] was granted a patent by the U.S. Patent Office in 1809 for a reading teaching device. A device to teach spelling was developed and patented by Halcyon Skinner in 1866. B. F. Skinner has called this the first real teaching machine. Maria Montessori patented a device in 1914 to train the sense of touch. Foltz[8] refers to a device designed to teach a proper trigger squeeze to U.S. Army recruits (1918) as the first truly mechanical self-instructional device put to widespread use.

Sidney L. Pressey, of Ohio State University, is generally credited with developing practical machines that could teach as well as test. He presented his famous paper at the Washington, D.C. meeting of the American Psychological Association in the 1920's. Pressey's versions were multiple choice test program devices. They immediately informed the student of the correctness or incorrectness of an answer. In case of an error, the question remained, the error was tallied on a counter, and the student made another try. Pressey's faith that the devices and programs were capable of producing changes in the effectiveness of instruction was not blessed with a receptive audience and he dropped all his work on such projects by 1932 and did not resume the work for decades. B. Frederick Skinner (of Harvard's Psychological Laboratories) has attributed the lack of much public interest to "cultural inertia." June Lewis (Barton)[9] adds:

> Psychologists have speculated that Pressey's theory was disregarded for several reasons. One reason was an economic one. No one in the education field felt any great concern for making teaching more efficient. In the 1920's, teaching was not an expensive process, and to the contrary, provided many persons, no matter how poorly qualified, with "positions." A second reason was that no fundamental learning principles really existed at that time.

Pressey was ignored until 1954 when B. F. Skinner, a psychologist, proposed a similar theory.[10] Skinner stressed that the science of learning is now in existence and that learning laws exist and should be applied to education.

What is Programmed Instruction:

Although lists of the characteristics of successfully-programmed instructional materials usually are limited to three or four principle concepts, the following list is longer and takes into consideration subdivisions of concepts and the contributions of many writers. Successful programmed instruction involves the following:

1. The material to be learned should be presented in a *logical series* of steps. Programmers find that, in their own teaching, they leave very much to the students, omit essential steps, and neglect relevant points. The responses students make to a program may reveal ambiguities and gaps that demand major revision, especially if one tries to guarantee a correct response at every step. Unless the programmer is extremely competent, he will probably learn many things about his subject and will learn how incomplete his knowledge of behavioral changes and the learning process really is.
2. Material to be learned should be organized and presented in the form of numerous, small, logical, and graduated *steps* (or *frames*) leading from the known to the unknown. The student has to focus his attention on a limited amount of material at one time. Pipe[11] says that "programs often look like fragments interspersed with questions." He admits the possibility of generating a program with this technique and that someone may actually learn from such a program "since students will persist in thinking, no matter how they are abused." The most desirable size of steps is debated by learning theorists. Small steps were at first thought most desirable. Edgar Dale[12] writes that the mere changing of step size or the number of steps is not an adequate solution. Offering a small or large spoonful of the same material is sometimes thought to take into account

individual differences. Dale suggests that steps be as large as the learner is able to understand and thereby implies that he is advocating a rather complex "branching" type of program.

3. A *response* (written or unwritten) should be elicited from the student to each (or at least most) of the frames. Continuous and active student response is required at moments when student interest and curiosity are at a peak. There is some disagreement about whether the student response should be overt or covert. Skinner advocates the constructed response, necessarily an overt response, because the student is forced to think more and learns more rapidly than were he to choose from a series of alternate (multiple choice) answers. The program is more a teacher than a tester in this operation in demanding positive effort. In addition, the constructed response reinforces only correct responses and offers no opportunity for an incorrect response to be learned. Barnes[13] quotes Krumboltz and Weisman[14] who assert that conclusive evidence is available indicating that more learning takes place when subjects are required to make overt responses. On the other hand, Susan Meyer Markle[15] favors covert responding and states that research studies have found them adequate and far less time-consuming than writing out a response. Covert responses are, simply stated, *thinking* the response. An overt response may take the form of any externalized responding action such as checking an answer, pressing a key, or constructing a response Skinner-fashion.

4. The student should be *immediately informed* (*feedback*) of the accuracy or inaccuracy of his response to each question. Garner[16] mentions that an error-rate of 5-10% is regarded as acceptable and that, if an error does occur, the fault is the programmer's, not the student's, and indicates the necessity of a revision. Garner obviously favors programs that are as error-free as possible so that the student is almost always correct. Reinforcement of correct answers is provided as well as correction in the case of erroneous answers—theoretically when student interest is at the highest. Foltz tells us that various studies show that optimum learning conditions result when a correct response is reinforced one-tenth to one-half second after it is made. The longer the time interval, the less the average amount retained. Step-organization, required response, and immediate feedback have been said to constitute the learning cycle,[17] a cycle repeated many times during the program. The response the student makes will either allow him to continue to the next step in the program immediately (in a Skinnerian, or *linear*, program) or will refer him to more advanced material, review work, or an explannation of an error (in a Crowder,[18] or *branching*, program). One programmed music text[19] prefaces its program with a reference to its view of error-rate: "Learning should be fun. However, in the early stages of

learning a subject, students make many mistakes. As a result, they often conclude that they do not like the subject. They would be more correct to conclude that they do not like to make errors."

5. A hoped-for corollary of the response the student makes is that *active student involvement* is insured in a manner not possible in a lecture approach or any unindividualized approach. Foltz[20] says that a survey of classroom teaching showed that the average student is actively engaged or interested in classroom activity only 20 percent of the time. Programmed materials, by requiring continuous active response, hopefully overcome passivity and inertia on the part of the student.
6. The self-instructional nature of programed materials should permit the student to determine or follow his *own learning pace*. He can move as rapidly or as slowly as his comprehension level and interest require or permit. An infinitely patient tutor is assured the slow learner and an untiring teacher is provided the learner who wishes to continue the lesson for a long period of time. Inhibitions on effective teacher-classroom instruction lie in the variables of time limitation, student numbers, and different individual learning rates. Programmed instruction attempts to aid in the assimilation and retention of knowledge by overcoming such blocking factors.

These seem to be the most frequent characteristics cited in reference to programed materials at the present stages of development. We might also add the following points for a fuller understanding of the subject:

7. Machine operation should be almost completely *self-contained* so that a minimum of the student's attention involves pure manipulation of the operational process of the machine.
8. Skinner[21] writes, "The purpose of a teaching machine can be simply stated: to teach rapidly, thoroughly and expeditiously a large part of what we now teach slowly, incompletely and with wasted effort on the part of both student and teacher."
9. Feedback data allows designing *improvements* and making *revisions* from experience. The sequence the student goes through is carefully graded and has to some extent been demonstrated to produce learning.

> With conventional textbook and lecture procedures, it is impossible for the writer or teacher to assess accurately at what point the student makes errors or "loses the point." Programmed presentations, however, have been evaluated experimentally. This course has been through a series of thorough revisions on the basis of responses actually made by the students. In this way, ambiguous statements and instructions have been removed and additional examples have been added to difficult portions . . . [22]

10. Individual differences should be provided for. We will discuss

this point later, especially in reference to the "types" of programs.

11. The teacher is afforded the *class time* to do all the things he previously could not find time for. Most of his class time can be devoted to idea and concept teaching, leaving drill processes to the machine and the student's time. Of course, as knowledge of programming develops, we might assume that highly sophisticated materials might be presented in programmed format.
12. Each student has a *master teacher* at his disposal. This, of course, assumes the existence of a relatively perfect program.
13. Several *phases* of the instructional procedure may be *integrated*. For example, review items may be injected throughout the material to provide reinforcement of previously learned material at various intervals.
14. A good program assumes an adequate *philosophy of education* and an understanding of the learning process. James McClellan[23] forcibly communicates this idea:

> Programing gives us control over the content and processes of learning. It, therefore, requires us to think more deeply and cogently than ever before on basic educational questions: What are we trying to teach? Is it really worth teaching? To some? To all? What activities other than pure instruction should we include in a total school program? Etc. Programing doesn't commit us to a philosphy of education; it forces us to build one.

Preparation of the Program:

Although program preparation is not our primary concern, we will take a brief look at the subject. Obviously, if care is taken to construct a useful program, substantially more time will be consumed than would be the case in writing a textbook of a more conventional nature. Norman Crowder [24] has estimated that it usually takes between 100 to 150 hours to program adequately the material covered in an hour lecture.

Philip Lewis[25] provides an orderly outline of program preparation:

> Establish definite educational objectives for the unit or course.
>
> Identify the body of content, the skills to be developed or the processes to be involved in achieving the objectives.
>
> Divide the content area into learning *increments* (small bits of information or instruction, each of which can be easily mastered by the learner). The increments are also called *frames*.
>
> Arrange the increments in a learning sequence (simple to complex, concrete to abstract).
>
> Insert *cues* and *prompts* in the sequence where these are deemed necessary to assist the learner.

Insert review increments as the program progresses to keep the learner refreshed on materials learned earlier.

Provide a challenge for the learner to accompany every increment. This may be a question to answer, a problem to solve, or an operation to be performed.

Arrange for the learner to have immediate knowledge of results of his response to the question or problem before he begins the next increment.

In concluding this summary, we shall quote from Gilbert's[26] (associated with Educational Design of Alabama) outline of item types:

1) Lead-in Items neither give new information nor require the rehearsal of old skills. Almost a synonym for thematic prompts, their function is to orient the student to a problem and prepare him for new information.
2) Augmenting Items are items that supply new information to a student but do not require him to make an relevant response. Response required in such items may usually be of a kind that will help insure the student's careful reading of the item.
3) Interlocking Items are items that require a student to review established skills while new information is presented.
4) Rote Review Items present a problem identical to one earlier presented. Various studies show that there is little value in repeating items that have been answered once or twice correctly. It is here that the value of branching becomes obvious.
5) Restated Review Items require the rehearsal of a skill where the problem is restated in a different syntactical arrangement.
6) Delayed Review Items allow for the further practice distributed in time. They will differ from other items only in the time of presentation.
7) Fading Items are items that not only require the student to review what has been presented to him, but also have information withdrawn from item to item.
8) Generalizing Items present a verbal statement pointing to a common characteristic of several specific problems already presented to the student.
9) Specifying Items are items which exemplify a general rule in a specific case.
10) Dovetailing Items require the student to make separate responses to separate stimuli that otherwise become confused.

Types of Programs:

Though there are several types of programming techniques, two have dominated the scene and have received most of the attention. The Skinnerian (or "linear") program is one in which all the subjects follow the frames step by step, skipping none, and follow the same order or sequence of frames. This form of programing, an elaboration of Thorndike's "law of effect," takes as its point of departure the attitude that the learner has had no previous experience with the subject at hand. Some difficulty is therefore experienced in determining where to begin the program.

The strongest opposition to Skinner's programming methods is led by Norman Crowder of the Western Design Division of U.S. Industries (Sidney L. Pressey also appears to disagree with Skinner in this respect). Crowder has written about the programing form he advocates. His format is termed the "branching" or "intrinsic" approach. The design employs larger learning increments and multiple-choice answers. The alternate answers (besides the correct answer) are planned to take into account logical misinterpretations of the questions. They are not supposed to "trap" the learner, but to point out the area or areas where review or clarification is needed. We will look at sample answer frames from the Reese text cited below later. Crowder believes that merely confirming student responses by presenting the correct answer is not sufficient and that explanations are very important to the learning process. The student is told why he is correct or incorrect in a Crowder program.

The dispute over format is not at all settled, and Carlsen[27] compared the performance of subjects in a linear programing technique with a branching programming technique in a constructed-response program and found no significant difference in their performance as a function of programing technique.

Teacher Versus Machine:

Arguments against teaching machines on robotistic grounds have generally been abandoned since the teacher's functions of highest value are not assumed by the machine. Lewis Eigen[28] points out that if a teacher is able to be replaced by a machine, he needs replacing. Should the classroom be reorganized to allow machine and teacher to work together, a larger number of thoroughly trained teachers will be needed than ever before. Good teachers will have to write and revise effective programs and know how and where they will personally reach beyond them. Foltz[29] says, "individual instruction will really begin where the program ends by saying 'now go and see the teacher.'"

Though many proponents of programmed learning believe that the program and classroom instruction should dovetail and complement one another, others feel the program should operate almost entirely independently of instruction on the teacher's part. The teacher, in this case, would use his time for individual conferences with the students. Generally speaking, however, to put the teacher and machine in competition is to assume they are doing, or should be doing, exactly the same job. One should attempt rather to seek a unified total program of education in which the teacher uses all the available means (including the program) in the best combination to achieve teaching and learning goals most effectively. This is the challenge put to the teacher.

MUSICAL RESEARCH AND TEXTS

Dissertations:

In a summary of research work in programmed instruction in relation to music education, Carlsen[30] remarks that Charles Spohn's doctoral dissertation does not really qualify as a programmed instruction study since the feedback in the project offered somewhat delayed information regarding the accuracy of the student response. The results of the study, however, "did show the value of structured outside preparation over unstructured outside preparation, and the feasibility of providing this preparation by means of tape recorded material."

Carlsen[31] mentions that none of the studies he cites "conclusively supported the feasibility of using programed instruction as a means of developing aural comprehension, although the Spohn study and the Oberlin report (which we will examine later) provided sufficient information to hypothesize such a possibility."

Two important points should be noted from Carlsen's [32] study:

1. It can be concluded that in situations comparable to the experimental one, melodic dictation can be more effectively taught by programmed instruction than by the tradditional teacher-classroom approach.
2. Of particular interest is the fact that tests for critical differences revealed that the differences occurred with complex concepts, and only with the control group. This would indicate that melodic dictation taught by programmed instruction is almost as effective with complex aural perception concepts as it is with basic ones, whereas a definite lack of effectiveness (significant beyond the 1 per cent level) is observed in the teaching of complex concepts by the teacher.

In another article, Carlsen[33] summarizes significant parts of his own and others' doctoral dissertations:

> Research by Carlsen, [34] Daniels, [35] and Kanable[36] shows that the ability to relate symbol and sound can also be developed within a musical context. Carlsen has programmed materials for melodic perception combining both the heuristic and the mathetical approach to concept development and to sequencing . . . The fact that this contextual approach is effective is substantiated by a study which indicated that complex concepts were taught nearly as effectively as simpler ones. Such is usually not the case in a classroom situation.
>
> Daniels also used verbal cues as a mediational process in the training of harmonic dictation within a musical context . . . Results showed the training method to be effective.
>
> Kanable has shown sight singing ability to be effectively developed by means of programmed instruction. Using a tape recorder which operated similarly to those found in most language laboratories, students compared their sight

singing performance with a model performance. No student in the study indicated any difficulty in making the aural comparison, and the results in terms of training gains would indicate that the comparison technique for feedback was an effective one. Kanable has approached the problem of creativity to some extent in her program by requiring the student in certain frames to "compose" part of the melody, the composed part to fit with the remainder of the melody which would be heard on the tape.

Virginia Reese has programmed an interesting text on musical form (dealing especially with smaller formal units). She states that technical training in the field of music is a prerequisite for approaching the text. This includes generally at least two years of college level music theory. A fundamental working knowledge of musical terms and notation was also presupposed. The text is an example of a "scrambled" program, so that pages are not read consecutively. Because of the lively manner of wording corrections and commendations to the student, and because the branching allows for a certain degree of individualization, the experience of reading the text is an enjoyable one, at least for one who is sufficiently motivated to undertake the study of form (quite a controversial study to attempt to program!). This is not to say that this text is unsuccessful or that programming somewhat controversial elements is impossible, but should point out that most of the textbooks so far published have usually stayed within the realm of elementary theory, and probably wisely so, both because these pioneer experiments within the area of musical research offer enough difficulties in themselves, and especially since music programming to date generally uses only the most primitive and most sales-oriented equipment.

The correctional frames in the Reese text exemplify what Foltz[37] has called "aversive reinforcement." The first of the three examples cited below is an example of such reinforcement. The other two examples illustrate other modes of frame information.

> YOUR ANSWER: Exact repetition.
>
> No, no! Exact repetition requires the exact restatement of notes on the same pitches previously used . . . [38]
>
> YOUR ANSWER: A melodic figure may be identified by the occurrence of a long note or a rest.
>
> This is indeed a correct statement, but you were to select the false statement — remember? This is rather sneaky in turning the tables after several questions in which you were to choose the *correct* statement. But I thought this might make you alert and avoid a coffee break. However, since you landed on this page, perhaps you should take five. Then, return to page 36 for another try. Okay?[39]
>
> YOUR ANSWER: Fifth of the I chord in the soprano, movement of the accompaniment continues, and one preliminary tone or pickup occurs on the last half of second beat of measure four.

> Excellent! You are moving through more and more minute analyses with fine spirit.[40]

Barnes[41] tells us that his study was concerned specifically with only those learnings in the meaning and function of music symbols. This is the meaning of his usage of the terms "fundamentals of music" and "music fundamentals." His programmed text was based on a variation of the linear technique in that a set of "criterion questions" is placed at the beginning of each of the sections in the book. Were a subject able to answer the criterion questions correctly, he would not be required to complete the section. Barnes[42] reached several conclusions of interest.

> The programmed instruction, as developed and used in this study, did appear to provide for more effective learning than that learning occurring in a similar situation without the ancillary use of programmed instruction, as measured by the amount of information retained.

Furthermore, the subjects responded favorably to an opinionnaire that the material (as an ancillary learning experience) offered a good way to help students learn this kind of material. Approximately 86% indicated their desire to work with additional programed material which would deal with other aspects of the course. And, lastly:

> The results of the study suggest that there is no apparent relationship between the musical background and college achievement level of the subjects and the effectiveness of learning through the ancillary use of programed instruction.[43]

Theodore Ashford[44] developed a constructed-response type of programmed text. Fundamentals of music theory were presented and chiefly included the content of the first portion of the freshman music theory course offered at the Northwestern University School of Music. He found that the programed instruction subjects performed significantly better than teacher-classroom subjects and the former required less time to learn the material. Although the experimental group forgot a significant amount of material, further examination revealed that, of the two experimental sections, the amount of material retained in one experimental section was considerably greater than that of the second. Other variables seemed to have affected the results. Ashford concluded that his results implied that "the combination of programmed instruction and teacher-classroom methods may be implemental in solving the problems of teaching theory caused by the increasing amount of subject material resulting from contemporary developments."

In his doctoral dissertation, Ashford states his conclusions and results as follows:

> *Conclusion No.* 1. Programmed Instruction in the fundamentals of music theory is at least as effective as a teacher-classroom method in preparing subjects to perform on an examination administered immediately after the instructional period.[45]

Conclusion No. 2. Programmed instruction in the fundamentals of music theory requires less time than a teacher-classroom method in preparing subjects to perform on an examination administered immediately after the instructional period.[46]

Conclusion No. 3. Programmed instruction in the fundamentals of music theory allows each subject to learn at his own pace without significantly affecting his performance in immediate recall.[47]

Conclusion No. 4. Programmed instruction in the fundamentals of music theory is at least as effective as a teacher-classroom method in preparing subjects to perform on an examination administered eight weeks after the end of the instructional period, providing that instruction in the same discipline is continued during the time lapse.[48]

Conclusion No. 5. Programmed instruction in the fundamentals of music theory is not detrimental to subsequent non-programmed learning of more advanced material in the same discipline.[49]

RESULTS:

1. There was no significant difference between the experimental and control groups on a pre-test before the beginning of the instructional period.
2. There was a significant difference between the post-test scores of the two groups in favor of the experimental group.
3. There was a significant difference between improvement scores of subjects in favor of the experimental group.
4. There was a significant difference between the time scores of subjects in favor of the experimental group.
5. There was a significant difference between the improvement scores of subjects scoring below the mean on the pre-test in favor of the experimental group.
6. There was a significant difference between immediate and delayed recall scores of experimental subjects in favor of immediate recall.
7. There was no significant difference between immediate and delayed recall scores of control subjects.
8. There was no significant difference between retention scores of experimental and control subjects.
9. There was a significant difference between delayed recall scores of subjects in favor of the experimental group.
10. There was no significant difference between departmental final music scores of experimental and control subjects.

In addition, the following results pertaining to the experimental group and to programmed instruction in general were obtained:

11. There was no significant correlation between the number of frames missed in the programmed text and improvement scores.

12. There was a significant and negative correlation between time per improvement and improvement scores.
13. There was no significant correlation between the number of frames missed in the programmed texts and retention scores.
14. There was no significant correlation between time per improvement and retention scores.[50]

Research Studies and Reports:

Carlsen[51] has written about measures for learning and argues that vague terms such as understanding, appreciation, or knowledge are not at all the best way to discuss learning. Rather, operational terms in reference to the behavior appropriate to that learning (such as writing, playing, or aurally identifying) should be used. There is obviously no way of getting inside the student's mind to evaluate his understanding, and one must necessarily rely on observation of the student's behavior (playing a bassoon, writing music from dictation, aurally identifying a passacaglia) for an estimation of learning. This is not to deny the thought process nor to say that there is nothing covert occurring in the learning process, but it does place the emphasis on observable evidence as the best current measure for learning. "If this be true, *learning* can be defined as the development or modification of behaviors associated with the learning objectives."[52] We will take this up again at the end of this paper.

Bernard Fischer[53] has done work in applications of programmed learning to string teaching. He advocates rote procedures as advantageous and explains that the student repeatedly attempts to reproduce stimuli made up of sound patterns and physical movements (imitation). After intelligent repetition, absorption and retention occur. This Mr. Fischer calls learning.

While a graduate student at Washington University in St. Louis, June Lewis [Barton][54] experimented with a program for sixth graders which dealt with stylistic characteristics of music of the Classical period. Among her purposes were, "To provide opportunities for children to listen on their own, but with direction of purpose. To aid the child in verabilizing about musical selections he has heard."

Spohn and Poland have found that the greatest learning gains in perceiving tone groups were obtained when both aural and visual components were present. There are two ways in which this combination could occur: 1) tone groups were heard (aural), and responses were written (visual) or 2) tone groups were notated (visual), and responses were sung (aural). This would seem to support Hargiss'[55] findings, quoted by Carlsen, concerning multisensory involvement (a standard underlying concept in language teaching as well as a traditional emphasis in both sight singing and dictation in music). Spohn and Poland[56] also report that "learning procedures most closely associated with the learning task will produce the superior training results."

Smith, Hammar, and Ray[57] (at Kalamazoo College) developed aural perception materials to replace classroom instruction in ear training. The authors suggest in the instructions that the student anticipate the taped sound or sing the tone groups in retrograde, and they encourage the students to "find *any* ways of using the tapes that will help you achieve the goals."

Carlsen[58] also mentions studies of Sherman (testing the hypothesis that atonal organization will transfer to perception ability with tonally organized materials), Kaderavek (using contextual materials to develop aural perception with undergraduate music students), and Sherburn.

The research and experimentation that is being done today ranges from the construction of a "homemade" program sheet by Robert C. Jones (of the Southeastern Missouri State College music faculty) in which part of the sheet folds over and conceals the answers until the student is ready to check his answers, to a multi-tape experiment at Peabody College (developed by Gilbert Trythall) that presently utilizes no written text. RCA Quickload Tape Cartridges are used for convenience in playback and storage. The present number 15-30 minute tapes is over one hundred.

Published Programed Music Texts:

Carlsen's *Melodic Perception*[59] text sets out to develop in the learner an ability to: "(1) Write in accurate musical notation melodies which are played on diffeernt melodic instruments; (2) recognize when, and in what way, the printed music differs from that which is played; and (3) identify a performing instrument when it is playing a solo melody or rhythmic line."

Guidelines for practice in sight singing are also provided by this course of study. Prerequisites for effective use of the book are knowledge of major key signatures through five sharps and flats, the ability to read treble and bass clefs, and knowledge of rhythmic note values. Experience in playing a musical instrument or singing are also presupposed as well as the ability to write musical symbols legibly and accurately (although Carlsen says the latter can be developed quickly by perceptive learners).

There are 570 frames in the text and construction follows the linear approach so that frames should be followed only in the sequence presented. The text has been both criticized and praised for initially presenting rhythmic and melodic material separately. Kraft[60] complains that the student takes down complete melodies in less than half of the exercises and that two measures are counted aloud on the tapes before the melodies are played. He argues that the problem of transfer from this program to a situation with fewer built-in cues (such as the classroom and concert hall) may not occur. Nevertheless, the text-tape combination seems to have won the respect of many educators and students if only for its usefulness as an aural aid in developing melodic and rhythmic dictation skills.

Harder's text[61] contains 1,003 frames and is linearly conceived. No aural examples are provided though the author emphasizes the importance of hearing the items. Obviously, this would presuppose either some performing knowledge on the learner's part or the assistance of someone who could play the examples. The text deals with fundamentals such as the notation of pitch, classification of time, note and rest values, basic scales, major and minor scales, key signatures, and intervals and triads. Carlsen[62] points out that Harder has included material not always found in a fundamentals text (namely, instruction in basic principles of acoustics, the overtone series, and construction of scales in the church modes).

There are 498 frames in the Andrews and Wardian text (also linear) which is prepared for the elementary classroom teacher. The foreword[63] to the instructor proposes the purpose of giving elementary school teachers a *practical* knowledge of music for use in the classroom. The basic philosophy is stated as follows: "The classroom teacher should acquire the necessary knowledge and skills of music by using the same general learning procedures as the children he will teach." Wardian also states that "This book is not intended to be a total self-instructor. In each of the classes involved, however, the professor found that *significantly less class time was used for drilling on the fundamentals of music and that significantly more class time was available for singing, rhythmic practice, and the teaching of piano and other classroom instruments.*"[64] Carlsen points out that the materials presented to be played at a piano keyboard cannot be checked by feedback. He does not mean this to be an indictment of the text, however, and refers[65] to Hargiss' statement that the ". . . ability to perceive tonal relationships . . . is most easily and rapidly developed when hearing, sight, and touch are employed together, the senses reinforcing one another." The authors include songs typically found in books used by the children the classroom teachers will ultimately be teaching.

The work on the Clough program[66] was begun as part of an Oberlin College project on programed learning and was supported by a Ford Foundation grant. The text presupposes that the reader knows the names of notes in the treble and bass clefs and the names of keys on the piano keyboard. High school age and older students were the audience intended but "musically and intellectually gifted students of junior high school age" may also undertake the program profitably. The text has been used with a notable degree of success in theory classes for students ranging in age from 10 to 18 under Lewis B. Hilton and assisting teachers at Washington University, St. Louis.

A text by Barnes[67] was developed as part of his doctoral dissertation. "Criterion questions" appear at the start of each chapter. If the student can answer these, he can skip to the next chapter. This is a variation of the linear approach. The content stresses fundamentals much like those in many of the other available texts, and the student audience intended is the prospective elementary classroom teacher. The text is also intended to be used as an aid in a classroom situation, not as a teacher substitute. Neither does the text propose to teach the art of music; only basic information about music is presented. Four to six hours are usually required for the completion of the text. Many teachers of general music classes at the junior and senior high school level have also used the text. Others who have found the text profitable are "beginning instrumental students in band, orchestra, and piano; students in remedial music-theory classes in college, and by individuals who wish to engage in a home-study program in music."[68]

John Batcheller's text[69] is designed for use at the fifth grade level and has a complementary book of work sheets in which students can record their answers. Its purpose is to introduce the beginner to the fundamentals of music notation. The primary purpose is to teach music reading through active means. The text consists of 1,042 frames. Texts with accompanying workbooks are much more economical to use than those in which the answers are to be written into non-reusable texts.

A linear text by Chakerian is especially attractive in format and presentation and has been tested and successfully used on students ranging in age from 11 through maturity. The fundamental notation system of music is the proposed content (minor scales, minor key signatures, and tempo indications are not included). Qualifying statements[70] are made during the text so that students do not presume that enharmonic tones would sound identical on an instrument using the perfect scale. "The purpose of this course is to prepare the student for beginning musical training."[71] The text is also published in a form usable in a teaching machine which more conveniently displays the frames and gives feedback. An ability to read and follow simple instructions are all the prerequisites demanded for using either form of the text.

When Barnes wrote his doctoral dissertation, only the Chakerian text and one by Batcheller and DuBois had been published in music. The latter was designed to teach the elements of music reading to fourth and fifth grade students at the elementary school level. It was also published in two forms (as a programed text or for use in a teaching machine).

A short program[72] (mimeographed) intended for the third grade (elementary level) is published by Learning Incorporated. It begins by designated notes as "walking," "running," or "skipping" notes and then brings in their proper technical names (quarter, eighth, and quarter-eighth).

Howard[73] is the author of a recent text on fundamentals of music theory that is linearly conceived. Notation, rhythm and meter, scales, intervals, key signatures, and triads, are the material included. Howard does not seem to demand any previous musical knowledge since he includes a diagram of a section of a piano keyboard for the benefit of those who do not know it.

Dallin's text[74] is linear and is written in textbook form with frame-type questions frequently included throughout. As the title indicates, developing music reading abilities is the point at hand. The student's previous knowledge and his interest are the limiting factors in how much he will profit from using the text.

IMPLICATIONS AND POTENTIAL FOR THE FUTURE

What is Needed in Programming:[75]

Aside from experimentation with other content areas in music programs, sound supplementation-coordination for programed texts to fill the need for hearing what is studied and individualized teaching techniques seem to be much needed in the field of programed instruction. Carlsen[76] mentions the first as very worthy of study: "There is need in the subject discipline of music to more clearly ascertain the effectiveness of programed learning as a teaching method, particularly as it involves the non-verbal stimuli of sound."

Although Philip Lewis[77] remarks that programmed instruction is truly individualized from a time (or rate) point of view in allowing the student to proceed at his own rate (which supposedly offers continuous challenge to the learner), others disagree that such individualizing is sufficient. Schramm[78] speaks of a group of studies and concludes:

> The hope has always been that programs would be the magic key to the door of *individualized* instruction — that they would liberate a student from the lockstep of a heterogeneous class, let him move forward at his own best pace and go as far as he can, release teachers from much of the routine of exposition and drill and let them concentrate on smoothing and enriching the progress of individual students. This has been the hope. But these four studies show that it is still far from being completely realized.

With more complicated maneuvering of tape recorders, etc., and especially the use of more complex equipment (e.g. computers), the sound element should at least technically be able to be incorporated successfully in future programs (the Carlsen is the only published programmed text at present that includes recorded sound material as part of the course). The problem of individualized instruction brings in the controversy over linear, branching, and other techniques and demands serious and continued research. The problem becomes more complex as more numerous varieties of musical content are programed. Obviously, elements of musical theory will not be as problematical as, for example, a course in improvization which would presuppose a broad and common background of theoretical training as prerequisite of the students.

What Are Some Potential Ramifications for the Future:

Carlson[79] has emphasized that, in practical application, the most benefit will probably be derived from a program if it is not the sole educative source utilized in a given discipline. Potential job roles it might fulfill include its use as outside preparation material, or for remedial, enrichment, or diagnostic reasons. He concludes that the only limit on its effectiveness is the teacher's imagination in utilizing the material.

Though Margolis does not feel the statement has been proven or perhaps even that it is demonstrable, Skinner[80] has stated, "Anything that can be verbalized can be taught in a teaching machine." It would seem to be obvious that some degree of verbalizability is necessary before a content can be programed successfully, and the more clearly the content (e.g. even attitudes) is defined in verbal terms, the better will the program function as an educating tool. Dale[81] seems to agree in stating that the greatest development of programed instruction has occurred in those fields of learning where the basic elements are indeed basic, predictable and systematic. Ashford[82] mentions the popularity of the programed instruction tool for teaching factual information. These statements seem to explain the popularity of "fundamentals of music theory" programed texts on the part of programers. "Music theory lends itself especially well to this treatment since the so-called elements of music are specific in nature."[83]

Certain well-defined areas find particular fulfillment in programed form. These include memorization of facts, nomenclature, procedures, and mastering of simple concepts and principles, all of which usually require many hours of teacher time. Foltz[84] remarks how inefficient and wasteful it is "to force teachers to spend so much time on drills, listening to recitation, delivering 'canned' lectures and grading objective examinations." He also includes some motor skills that are normally taught by rote and frequent drill.

Another approach has stressed the cumulative nature of skills that are best programed, skills in which one step leads logically to another (e.g. simple to complex or concrete to abstract). Foltz[85] includes studies such as spelling, French vocabulary, and physics. While most of the programed learning experiences have primarily involved reading for their communication media and while most of the emphasis has been placed on individual self-paced instruction, Dale[86] finds evidence that group instruction through the film (or other) media is also successful.

Ihrke has done work with other machines that gives him a certain area of experience beyond that of many programers. Skinner[87] states that, "Some of the machines also hold the promise of teaching behavior of a kind and subtlety that until now has seemed beyond the reach of explicit teaching methods." Though it is not desirable in all fields, machines could undoubtedly be built which could measure student performance error in rhythm and pitch to a degree too small for human perception. The degree of error measured could be easily adjustable to gear the training to a particular stage of development in a particular student. The machine could be adjusted to demand more precision in response as the student gains proficiency. Ihrke has developed a device that gives "early" and "late" signal light feedback for confirmation purposes. The rhythm trainer circuitry connects both the keyboard and a pre-recorded set of signals on a tape recorder. A sensing device "reads" both the recorded and student performance and activates the correct light in the case of an error. Another possibility is a keyboard that would only sound when the correct key

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was played. Maltzman[88] has shown that such a device can also provide for eliminating incorrect responses. Carlsen sees no reason why devices with similar feedback systems could not be fashioned using instruments other than the piano.

Carlsen also mentions the possibility of experimenting with a combination of aural and visual materials with a "performance reading" device in teaching Music Fundamentals, Harmony, Counterpoint, History and Literature, and Form and Analysis. He also mentions teaching instrumentation and scoring and some phases of conducting. "The implication here is that programed instruction may both require and make possible broad curricular changes."[89] With minor electronic keyboard modifications, machines could train students in keyboard harmony. Keys could be set in relation to both pitch and duration and produce tone only when played correctly. Were the machine computer-controlled, more precision could be built in.

Funds presently available to music educators would probably prohibit the extensive use of a centrally-located computer, but such a type of operation has already been used in other subject disciplines. In addition to directly building on to present instruments, "tone sensing" devices (pitch, duration, amplitude) are conceivable and might give immediate and precise feedback of performance behavior results on either instrument or voice. Carlsen[90] concludes on a practical note:

> Gadgetry of these types has exciting potential, but it is important to remember that the gadget is only a tool — it is the program of instruction built into it that shapes the behavior. History will tell us whether these expectations will be realized in the future. Today we should determine what programmed instruction is best capable of doing for us, and then use it accordingly.

Although Ihrke does not expect a machine to teach creativity, he does envision machines teaching a repertoire of precise knowledges and concepts which the student can employ in creative listening, performing, and composing. Perhaps, as more is studied about creativity, a program can allow for the kind of atmosphere necessary to foster creative thinking and acting.

Ihrke speaks eloquently as a musician of the capacities of machine and the limitations of machine. He stresses as most important a constant association with actual musical sound and speaks of the kind of machine we spoke of before in which an instrument or voice transmitted to a machine *via* microphone is criticized or evaluated by that machine *immediately*. Such a situation can in no wise be called robotistic if the student response is as completely musical as Ihrke desires. The student can both hear the sound he produces and be presented with a critique of his performance. He writes:[91]

> In my estimation, automated music training is acceptable only if the student is allowed to identify himself continually with the total musical experience. Reading music notation without inwardly hearing the sound, or performing with-

> out previously being aware of the sound, are equally faulty procedures and gradually lead to a sterile contact with music which finally brings the proficiency gain to a complete halt.

Lewis encourages experimenting with tachistoscopic and other projected approaches to teaching machines as well as beginning fingering practice (see Bigham's work cited in the Bibliography). He says, "The creativity inherent in the many facets of music holds great potential for development in this area."[92]

Carlsen mentions that if aural perception programs are adequately developed, rather than replace the teacher, they would increase the shortage of good teachers. The teacher will necessarily have to be more alert and tend to the individual needs of 30 *individuals* rather than the former situation in which he most often taught a *class* of 30 students. Whether a machine can handle a great deal of the individualized training effectively is subject to study. We mentioned before that many feel the most effective use of the program is as an ancillary classroom experience and not as the sole classroom experience.

Many teachers (of keyboard instruments, for example) refer constantly to performance characteristics of Schnabel with a Beethoven Sonata; Valenti with a Scarlatti Sonata; or Tagliavini, Heiller, or Walcha with a Baroque organ composition. It would seem possible to program a keyboard instrument to compare student performance with the "master." Although such does not seem the best procedure to this author (at least not a very many stages of artistic development), as the process of programing becomes more sophisticated and less time-consuming, the individual teacher may be able to program many elements successfully and efficiently that could be used during the student's practice time so that corrections and observations the teacher makes are not inadevertently overlooked and wrong habits learned. The expense, time, and complexity of such a project, however, does not seem to warrant realization in the very near future.

Goldiamond and Pliskoff have written with great technical insight about music education and potential ramifications in the use of teaching machines. A summary from that article is presented because of its insight and consequent significance:

> 1. *The behaviors involved in music are operants.* The teacher . . . would like to have the child develop an ear for music, so that he can correct himself. Stated otherwise, he would like the consequences (sounds) that the child produces to affect the child the same way that those sounds affect him (another set of consequences), so that the child's musical behaviors are altered or maintained.
>
> Accordingly, a technology whose subject matter is a systematization of the maintenance and modification of behavior by its consequences may be relevant to the practice of teaching music.

2. *Alteration of behavior is a means of developing procedures for training* . . . The child's changing behavior guides the teacher in analyzing what he should do; it develops his teaching skills, that is, it changes his teaching behaviors.

In the experimental analysis of behavior, modification of behavior as the variables are being changed is one of the major investigative tools not only for developing procedues for the alteration of behavior, but for understanding the functional relations between behavior and its enivronment. Accordingly, an experimental approach which has developed systematic ways of modifying behavior may be relevant for music education, one form of modification of behavior.

3. *Alteration of behavior is a means of developing insights into its processes* . . . may also help him understand the child and the nature of the music learning process.

. . . Such alteration is a prime investigative tool for basic research in the experimental analysis of behavior. Accordingly, such an experimental procedure may be useful in developing systematic ways to understand the music education process in the course of the ordinary practice of teaching music.

4. *Learning is an individual process.* It is a single child who learns, and it is a truism that a classroom consists of individual learners. A child who fails is not consoled by the fact that the teaching method used is efficacious for the average child, or produces better average performance than another method, or teacher. Nor are his parents so consoled, nor is the conscientious teacher.

Operant research is characterized by the use of single organisms for extended periods of time, and the alteration of behavior of the single organism being studied is one of the prime investigative tools. Stated otherwise, the attempt is to develop lawful procedures and relations which hold using an individual organism.

Accordingly, an experimental and technological procedure which assays its success by its effects upon the individual may be relevant for music education, which assays its success similarly.[93]

5. *Learning may be a long-term process.* The child learns over an extended period of time.

Operant research involves extended periods of time, and the learning organism is checked against his own behavior at preceding times. It has been observed that changes which occur over a short period of time are often transient, and are not characteristic of the changes that a procedure will produce when applied over an extended period of time. Accordingly, a procedure which incorporates such long-term effects in its design may be relevant for the procedures of music education.

6. *Learning often involves continual adjustments.* The experienced teacher tries, especially with beginners, to provide continual successes. He tries to arrange the material and his rela-

tions to the child so that the child is not discouraged by failures, and keeps advancing.

In programmed instruction, an attempt is made to set up a program which starts with the child at his entering level. Through successive steps which require small changes in behavior, and are so arranged that the child is reinforced at every step, his behavior is altered to the terminal behavior required, without failures which might discourage him.

Programmed instruction is, to a considerable extent, related to the experimental analysis of behavior. Accordingly, if it is to be applied to music education, consideration of its rationale may be relevant.

7. *Motivation may be defined by observables.* . . . Motivation is often considered a process within the child, whose motivational processes are thus considered difficult to tap.

Operant research defines motivation in observable terms, and suggests procedures for its experimental control. These procedures find use in laboratories where behavior is sustained for extended periods of time, under conditions which allow for considerable freedom. Motivational variables enter into the very definition of the stimulus and response classes being investigated.

Accordingly, a procedure which incorporates motivational variables into the basic definitions of some of its major terms, and deals with them in an observable and manipulable manner, may have relevance for motivational problems in music education.

8. *Complex processes are known by their behaviors.* Music educators often talk in terms which imply complex higher mental processes. Examples of such terms are insight, creativity, meaningfulness, and appreciation. These processes are considered extremely important in learning music.

One of the characteristics of linguistic analysis, which operant research shares, is its attempt to specify complex processes through the behaviors and conditions by which such processes are identified. The question asked is essentially the following: When we state that a person is engaged in a certain process, say, that he is interested, what is it that he has to do, and under what conditions, for us to state that he is interested? Rather than trying to define interest as an internal process (although there may very well be internal components), we look for the behaviors which define the term for us. Stated formally, the question is: What behaviors under what conditions define the process we are interested in? We can then not only see whether or not we are getting such behaviors as criterion behaviors. If the intervening steps on the program are also specified behaviorally, we can also see how successful we are and alter our training procedures accordingly.

9. *The acquisition of knowledge is incorporative.* The teacher who develops a new method or new insights tests them out by

incorporating them into further practice, or by having others incorporate these procedures or insights.

In the experimental analysis of behavior, the procedures and functional relations developed to alter the behavior of a single organism are then repeated and validated with other single organisms. The functional relations and procedures developed in operant research have been replicated literally thousands of times. That other investigators are able to apply them leads directly to the next point.

10. *Communication of knowledge is often simplified by explicitness.* The attempt is often made to communicate new methods and insights developed in music education. The procedures and insights are often difficult to describe, and their validation is also often difficult to assay. One result of this communicative difficulty has been the establishment of special schools or approaches, whereby the new approach is communicated by implicit methods through having the student engage in similar behaviors.

In the experimental analysis of behavior the procedures for modification and the functional relations obtained are stated explicitly, and can be incorporated by other investigators, and validated by them.

Accordingly, an experimental and technological procedure which can explicitly state its advances so that others can incorporate them or validate them, may be relevant for the incorporation and validation of new techniques and insights gained in music education. Such explicitness is, of course, not restricted to operant research, but is an aim of scientific communication in general.[94]

In this manner we might arrange it so that the wrong key produced no sounds, and only the right keys produced sounds.[95]

With regard to music education, it should, however, be pointed out that the devices used in music education are instruments which *naturally* lend themselves to such programming. We do not have to add an electric typewriter to intervene between the child and the material. We do not have to develop special devices which convert the behavior into discrete responses such as tapping a key. Pianos are such devices. Other instruments contain similar devices. Even the violin requires discrete responses in the fingering by the left hand.

Musical instruments seem to be readily convertible to instruments to which the technology of behavior can be applied. And music also contains certain reinforces. People pay money to go to concerts and children whistle, practice instruments, and buy records. The instruments, the subjects, and appropriate contingencies are available. What seems to be required to apply the technology of behavior to their linkage is attention to such technology.[96]

The music educator should be cognizant of the great amount of significant work that has been done in the area of music and programed instruction. This paper relies heavily upon a large body of writing and research that to a large extent merely hints at the future and pleads for continued efforts. Whether further activity will bear out the hopes of many for more sophisticated programs or will change the direction of pursuit to other techniques cannot honestly be answered at present, but the success and progress made by past endeavors would seem to point to very beneficial and desirable outcomes that only the Vernes, Huxleys, and Orwells of our age can uninhibitedly and imaginatively envision. One is generally ill-advised and naive to seek for panaceas, but to seek for possible improvements and for more efficient media is a challenge to every man of thought in this age of technology.

GLOSSARY OF TERMS

1) AUGMENTING

A method of teaching a concept, working rule or principle by building up to it through small sequential bits of information. As the student learns the small easily assimilated steps, he will be led to formulating this concept or principle for himself without actually seeing it written out or explained. (Foltz).

2) AVERSIVE REINFORCEMENT

A way of negatively reinforcing a given action by an injurious or distasteful means such as spanking or subjecting a child to public ridicule for being wrong. In programing it is used to describe the technique of encouraging errors and then reinforcing the right answer by telling the student how wrong he is. (Foltz).

3) BRANCHING

A type of programing which has built-in alternate sequences of items for the extra-bright or slow student. If a student makes a single or a number of wrong responses, he is led through an alternate sequence of steps to give him remedial practice and new explanations of a concept he cannot immediately grasp. ("Wash back"=backward branching). If the student demonstrates by a series of correct responses that he has quickly grasped the material, he may be skipped forward over additional material on the same subject. ("Wash ahead"=forward branching). In a sense, any departure from a sequence of items proceding methodically towards a given learning goal. Intrinsic programing employs the branching technique. (Foltz).

4) CARTESIAN METHOD

A basic technique of programing devised by Descartes. It consists of breaking down a subject to be taught into its smallest component parts and then arranging these into a hierarchial order to aid the learning process. (Foltz).

5) CUE

Used interchangeably with *prompt* to mean any bit of information added to a program item to make it easier for the student to make the correct response. One of the objects of much current research is to determine how much material should be given to a student to enable him to get the right answer. This is called the problem of cue clarity. (Foltz).

6) ECHOIC REINFORCEMENT

Reinforcing a student response by showing him the right answer. Merely telling him he is right or wrong is called non-echoic reinforcement. Current research indicates that echoic reinforcement is the better method of reinforcing correct answers and leads to longer retention. (Foltz).

7) EXTINGUISHING

The process of forcing a student to unlearn a learned response or mode of behavior by failing to reinforce it each time it is emitted, or reinforcing it aversively or negatively. (Foltz).

8) FADING

The technique of lessening the number of cues or prompts as the program progresses, thus weaning the student slowly away from reliance on the program and forcing him to think more for himself. (Foltz).

9) FEEDBACK

A technique essential for programed learning which gives the student (and eventually the teacher) immediate knowledge of the correctness of his answers to items in the program. This acts as a type of reinforcement to correct answers. (Foltz).

10) FRAME

A single step of a program usually containing information and a question to be answered in one form or another. So called because it is exactly the amount of material that will fill the space of a display panel of a self-instructional device. Used interchangeably with *item*. (Foltz).

11) HEURISTIC

Applied to arguments and methods of demonstration which are persuasive rather than logically compelling, or which lead a person to find out for himself. (Webster New Int. Dict., 2nd Edition, 1954). Serving to guide, discover, or reveal; *specif*: valuable for stimulating or conducting empirical research but unproved or incapable of proof — often used of arguments, methods, or constructs that assume or postulate what remains to be proven or that lead a person to find out for himself. (Webster New Int. Dict., 3rd Edition, 1961).

This word comes from the Greek, *heurisko*, to discover or to find out, a meaning that still holds. The student is given the basic responsibility of solving the problems that confront him. The term is essentially synonymous with problem method or development method. (Encyclopedia of Modern Education, 1943).

12) LAW OF RECENCY

A basic concept of reinforcement theory, stating that the last response reinforced is the one that is learned. A corollary is that the more rapidly a response is reinforced, the better it is learned. (Foltz).

13) LINEAR PROGRAMS

Also called straight-line, non-branching, or Skinnerian programs. These are programs where the sequence of items is fixed, unalterable and identical for each sequence. Crowder would call these extrinsic programs, because the rate and sequence of presentation are not built in but determined by an outside agency, the program writer or instructor. (Foltz).

14) MATHETIC

Of or relating to science or learning. (Webster New Int. Dict., 3rd Edition, 1961).

15) PINBALL MACHINE EFFECT

A phrase coined by Skinner to describe the novely effect of learning with a self-instructional device. The use of a device or machine of any sort seems to be more interesting to the student than merely reading a text. (Foltz).

16) PROGRAM

The textbook of the self-instructional device. It consists of course material broken down into small, easily digestible bits and arranged in sequence to lead the student to a fundamental understanding of concepts basic to the course. (Foltz).

17) SELF-INSTRUCTIONAL DEVICES

Also called learning machines, teaching machines, or auto-instructional devices. This includes any device which can present systematically programed materials while making efficient use of reinforcement. That is, it has the facilities for displaying the programed material, offers some method for making a response and showing whether the response is correct or not. (Foltz).

18) SOCRATIC METHOD

The method of inquiry and instruction employed by Socrates, esp. as represented in the dialogues of Plato. It consists of a series of questionings the object of which is to elicit a clear and consistent expression of something supposed to be implicitly known by all rational beings. (Webster New Int. Dict., 2nd Edition, 1954).

19) STEP

This is the space between one item and another in terms of the mental operations necessary to go on to the next item. Difference in step-size is practically impossible to measure, although a subject of much theoretical dispute. The question is how much mental effort can be demanded of a student in going between one item and the next. (Foltz).

20) VANISHING

Both a programing technique and a factor of device design. In programing it refers to the gradual withdrawal of prompts from the program item so that the student is weaned away from reliance on the program for clues to the correct responses. In devices it is the mechanical capability of dropping out questions which have been answered correctly before. (Foltz).

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FOOTNOTES

1) Leon Dallin, "A Survey of Programed Music Teaching Materials," *Music Educators Journal* (February-March, 1966), p. 198.

2) James C. Carlsen, "Programed Learning in Melodic Dictation," *Journal of Research in Music Education* (Summer, 1964), p. 139.

3) Robert A. Barnes, *Fundamentals of Music*: A Program for Self-Instruction (New York: McGraw-Hill Book Co., 1964), p. v.

4) E. L. Thorndike, *Education* (New York: The Macmillan Company, 1912), pp. 165-67.

5) Charles I. Foltz, *The World of Teaching Machines* (Washington: Electronic Teaching Laboratories, 1961), p. 18. Also see Eugene Galanter (ed.), *Automatic Teaching*: The State of the Art (John Wiley and Sons, 1959), p. 46.

6) Wayne Lee Garner, *Programed Instruction* (New York: Center for Applied Research in Education, 1966), p. 2.

7) *Ibid.*, p. 8.

8) Foltz, p. 3.

9) June Lewis [Barton], "Pilot Study in Programmed Listening," unpublished manuscript and project report (Department of Music, Washington University, St. Louis), p. 1.

10) B. F. Skinner, "The Science of Learning and the Art of Teaching," *Harvard Educational Review*, Vol. 24 (1954).

11) Peter Pipe, *Practical Programming* (New York: Holt, Rinehart and Winston, 1966), p. vi (footnote).

12) Edgar Dale, "Instructional Resources," *The Changing American School* (Chicago: National Society for the Study of Education, 1966), p. 104.

13) Robert A. Barnes, "An Analysis of the Effectiveness of Programed Instruction as an Ancillary Learning Experience in a Music Fundamentals Class for Prospective Teachers" (unpublished doctoral dissertation, Ohio State University, 1963), p. 42.

14) John D. Krumboltz and Ronald G. Weisman, "The Effects of Overt versus Covert Responding to Programed Instruction on Immediate and Delayed Retention," *Journal of Educational Psychology*, 53 (April, 1962), pp. 89-92.

15) Susan Meyer Markle, *Good Frames and Bad*; A Grammar of Frame Writing (New York: John Wiley and Sons, 1964), p. xi.

16) Garner, p. 10.

17) L. M. Stolurow, Paul I. Jacobs, and Milton H. Maier, *A Guide to Evaluating Self-Instructional Programs* (New York: Holt, Rinehart and Winston, 1966), p. 1.

18) See pp. 13-14.

19) Len Chakerian and William Ventolo, *Fundamentals of Music* (Albuquerque, N.M.: Teaching Machines, Inc. (TMI-Grolier, 1961), p. iv.

20) Foltz, p. 7.

21) B. F. Skinner, "Teaching Machines," *Scientific American* (November, 1961), p. 9.

22) Chakerian and Ventolo, p. iv.

23) James McClellan, "Inside Opinion," *C.P.I. Bulletin*, Vol. 1 (May, 1961), p. 1.

24) Genevieve Hargiss, "The Development and Evaluation of Self-Instructional Materials in Basic Music Theory for Elementary Teachers," *Council for Research in Music Education Bulletin No.* 4 (Winter, 1965), p. 2.

25) Philip Lewis, "Teaching Machines Have the Beat," *Music Educators Journal* (November-December, 1962), p. 94.

26) Foltz, pp. 22-23.

27) Theodore Harold Askounes Ashford, "An Investigation of Programmed Instruction in the Fundamentals of Music Theory" (unpublished Ph.D. dissertation, Northwestern University, Evanston, Ill., June, 1965) p. 18.

28) Foltz, p. 64.

29) *Ibid.*

30) James C. Carlsen, "Programed Learning in Melodic Dictation," *Journal of Research in Music Education* (Summer, 1964), p. 140.

31) *Ibid.*, p. 141.

32) *Ibid.*, pp. 144-45.

33) James C. Carlsen, "The Role of Programmed Instruction in the Development of Musical Skills," *Comprehensive Musicianship* (Washington, D.C.: Contemporary Music Project, MENC, 1965), pp. 33-34.

34) James C. Carlsen, "An Investigation of Programmed Learning in Melodic Dictation by Means of a Teaching Machine Using a Branching Technique of Programming" (unpublished Ph.D. dissertation, Northwestern University, 1962).

35) M. L. Daniels, "Programed Learning in Harmonic Dictation" (unpublished Ed.D. dissertation, School of Education, North Texas State University, 1964).

36) Betty M. Kanable, "An Experimental Study Comparing Programmed Instruction with Classroom Teaching of Sight Singing" (unpublished Ph.D. dissertation, Northwestern University, 1964).

37) Foltz, p. 67.

38) Virginia Denyer Reese, "An Analysis of Musical Forms" (unpub-

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lished Ph.D. dissertation, University of Oklahoma, 1964), p. 19.

39) *Ibid.*, p. 72.

40) *Ibid.*, p. 108.

41) Barnes, pp. 45-48.

42) Barnes, p. 91.

43) *Ibid.*, 93.

44) Theodore H. A. Ashford, "The Use of Programed Instruction to Teach Fundamental Concepts in Music Theory," *Journal of Research in Music Education* 14 (Fall, 1966), p. 177.

45) Ashford dissertation, p. 60.

46) *Ibid.*, p. 70.

47) *Ibid.*

48) *Ibid.*, p. 72.

49) *Ibid.*, p. 74.

50) *Ibid.*, pp. 82-83.

51) Carlsen, *Comprehensive Musicianship*, p. 29.

52) *Ibid.*

53) Bernard Fischer, "Programmed Learning in Strings," *The American Music Teacher* (March-April, 1965), p. 20.

54) June Lewis, "Barton," p. 3.

55) Carlsen, *Comprehensive Musicianship*, p. 32.

56) *Ibid.*, p. 33.

57) *Ibid.*

58) *Ibid.*, p. 34.

59) James C. Carlsen, *Melodic Perception: A Program for Self-Instruction* (New York: McGraw-Hill Book Co., 1965), p. v.

60) Leo Kraft, Review of *Melodic Perception* by James Carlsen, *Journal of Research in Music Education* (Fall, 1965), p. 187.

61) Paul Harder, *Basic Materials in Music Theory: A Programmed Course* (Boston: Allyn and Bacon, Inc., 1965).

62) Carlsen, *Comprehensive Musicianship*, pp. 31-32.

63) J. Austin Andrews and Jeanne Foster Wardian, *Introduction to Music Fundamentals* (New York: Appleton-Century Crofts, 1964), p. vii.

64) *Ibid.*, p. viii.

65) Carlsen, *Comprehensive Musicianship*, p. 32.

66) John Clough, *Scales, Intervals, Keys, and Triads: A Self-Instruction Program* (New York: W. W. Norton and Co., 1964).

67) Robert A. Barnes, *Fundamentals of Music: A Program for Self-Instruction* (New York: McGraw-Hill Book Co., 1964).

68) Barnes, *Fundamentals*, p. v.

69) John Batcheller, *Musical Notation* (Wilmette, Illinois: Encyclopedia Britannica Press, 1964).

70) Chakerian, p. v.

71) *Ibid.*

72) *Music Makers* (Grade 3) (Scottsdale, Arizona: Learning Incorporated, 1963).

73) Bertrand Howard, *Fundamentals of Music Theory: A Program* (New York: Harcourt, Brace and World, Inc., 1966).

74) Leon Dallin, *Introduction to Music Reading: A Program for Personal Instruction* (Glenview, Ill.: Scott, Foresman and Co., 1966).

75) Obviously, what is needed and what may be immediately had are by no means synonymous.

76) Carlsen article, *JRME*, p. 140.

77) Lewis, p. 94.

78) Wilbur Schramm, *Programed Instruction in Denver: Four Case Studies of Programed Instruction* (New York: The Fund for the Advancement of Education, 1964), p. 12.

79) Carlsen, *Comprehensive Musicianship*, p. 147.

80) Richard Margolis, "Programed Instruction: Miracle or Menace?," *Revolution in Teaching* (de Grazia and Sohn, eds.) (New York: Bantam Books, 1964), p. 114.

81) Goodlad, *The Changing American School*, p. 104.

Dale, "Self-Instruction Through Programed Mateirals," *The News Letter*, Vol. XXVI (February, 1961).

82) Ashford dissertation, p. 2.

83) Walter B. Ihrke, "Trends in Music Education Research," *Council for Research in Music Education Bulletin* No. 2, 1964, p. 29.

84) Folts, p. 8.

85) *Ibid.*, p. 64.

86) Goodlad, p. 104.

87) Skinner, *Scientific American*, p. 92.

88) Carlsen, *Comprehensive Musicianship*, p. 33.

89) *Ibid.*, p. 35.

90) *Ibid.*

91) *Ihrke*, *JRME*, p. 18.

92) Lewis, *MEJ*, p. 98.

93) Israel Goldiamond and Stanley Pliskoff, "Music Education and the Rationale Underlying Programed Instruction," *Music Educators Journal* (February-March, 1965), p. 44.

94) *Ibid.*, p. 45.

95) *Ibid.*, p. 46.

96) *Ibid.*, p. 194.

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BIBLIOGRAPHY

I. *Programed Instruction in General*

A. *Books:*

Amsel, A. "Some Comments on the Manipulation of Error Responses and reinforcement Schedules in Self-Instructional Training Devices." Unpublished Staff Memorandum, Maintenance Laboratory, AFPTRC Lowry Air Force Base, Colorado; September, 1957.

Angell, D. and Lumsdaine, A.A. *Prompted Plus Unprompted Trials Versus Prompted Trials Alone in Paired-Associate Learning*. Pittsburgh: American Institute for Research, 1960.

Applications of Programed Instruction. General Education, Inc.

Austwick, K. (ed.). *Teaching Machines and Programming*. New York: Macmillan, 1964.

Automated Education Handbook. Automated Education Center; November, 1965.

Bell, John and Byrnes, Francis C. (eds.). *Research, Principles, and Practices in Visual Communication*. Washington, D.C.: Department of Audiovisual Instruction, NEA, 1960.

Barlow, John. "Earlham College Student Self-Instructional Project. First Quarterly Report." Unpublished report submitted to U.S. Office of Education. Earlham College; Richmond, Indiana; 1959.

Becker. *A Programed Guide to Writing Auto-Instructional Programs*. RCA Educational Programs.

Belcastro, Frank P. "Programmed Learning: Relative Effectiveness of Four Techniques of Programming the Addition and Subtraction Axioms of Algebra." "Research Abstract" of doctoral dissertation, U. of Pittsburgh, 1961. *AV Communications Review*, 10 (November-December, 1962), p. 356.

Brethower, Dale M. *Programed Instruction*: A Manual of Programing Techniques; a Self-Instructional Program. Chicago: Educational Methods, 1963.

et al. Programed Learning: A Practicum. Ann Arbor: Ann Arbor Publishers.

Brickell, Henry M. *Commissioner's* 1961 *Catalog of Educational Change*. Albany, N.Y.: State Education Department, 1961. The survey covered all of N.Y. State except N.Y. City.

Briggs, L. J. "Applied Research Problems." Paper read at a symposium on automated teaching, Western Psychological Association Convention; San Diego, California; April, 1959.

. *A Survey of Cueing Methods in Education and in Automated Programs*. Pittsburgh: American Institute for Research Report AIR-314-60-IR-106; May, 1960.

Brown, James W. and Lewis, Richard B. *A-V Instructional Materials Manual*. New York: McGraw-Hill Book Co., 1964.

and Thornton, James W., Jr. *New Media in Higher Education*. Washington, D.C.: Association for Higher Education and the Division of Audiovisual Instructional Service of the NEA, 1963.

California Test Bureau. *Lessons for Self-Instruction in Basic Skills*: Manual for Teachers. Monterey, California; 1963.

Campbell, V. N. *Adjusting Self-Instruction Programs to Individual Differences*: Studies in Cueing, Responding, and Bypassing. American Institute of Research; San Mateo, California; Interim Report Title VII, Grant No. 736103.00; 1961.

Carpenter, F. "The Teaching Machine and Its Education Significance." Paper read at the Twelfth Annual Meeting of the American Association of Colleges for Teacher Education; Chicago, Illinois; February, 1960.

Carr, W. J. "Bibliography on Teaching Machines." Unpublished report; Lewisburg, Pennsylvania: Bucknell University, 1958.

CPI Background Portfolio. Teachers College Press.

CPI Research Portfolio. Teachers College Press.

Clemens, Thomas D. *Research Grants and Contracts, Programed Learning and Self-Instruction Media*. Washington, D.C.: Office of Education, February, 1963.

Conference on Programmed Learning (summary report). Lawrence: University of Kansas, 1961.

Cookson, Frank B. *Recordings and Self-Tutoring*. Cleveland: The Brush Development Company, 1949.

Coulson, John E. (ed.). *Proceedings*: Programmed Learning and Computer-Based Instruction. Conference on Applications of Digital Computers to Automated Instruction. New York: Wiley, 1962.

(ed.). *Programed Learning and Computer Based Instruction*. New York: John Wiley and Sons.

"Programming for Individual Differences." Paper presented at meeting of Western Psychological Association, San Diego; April, 1959.

and Silberman, H. F. "Proposal for Extension of Automated Teaching Projects." Unpublished Field Note, System Development Corporation; Santa Monica, California; July, 1959.

Cram, David. *Explaining "Teaching Machines" and Programming*. San Francisco: Fearon Publishers, 1961. Cram's work is written in programed format.

Y AVAILABLE

Crow, Alice and Lester, D. (eds.). *Vital Issues in American Education.* New York: Bantam Books.

Crowder, N. A. "The Concept of Automated Tutoring." Unpublished Staff Memorandum, Armament Systems Personnel Research Laboratory AFPTRC, Lowry Air Force Base, Colorado; October, 1956.

"Intrinsically Programmed Materials for Teaching Complex Skills and Concepts." Paper read at Symposium on Automation of Teaching. American Psychological Association Convention; Washington, D.C.; August, 1958.

Day, J. H. "Teaching Machines." Unpublished paper. Athens: The Ohio University, 1959.

DeCecco, John P. (ed.). *Educational Technology;* readings in programmed instruction. New York: Holt, Rinehart and Winston, 1964.

deGrazia, Alfred and Sohn, David A. (eds.). *Programs, Teachers, and Machines.* Princeton, N.J.: Metron, Inc., 1964.

and (eds.). *Revolution in Teaching.* New York: Bantam Books, 1964. See especially the article by Margolis.

Deterline, William A. *An Introduction to Programmed Instruction.* Englewood Cliffs, N.J.: Prentice-Hall, Inc.; 1962.

Dolmatch, Theodore; Marting, Elizabeth; and Finley, Robert E. (eds.). *Revolution in Training:* Programed Instruction in Industry. New York: American Management Association, 1962.

EDP Programming. TECO Instruction Inc.

Edwards, A. *Experimental Design in Psychological Research.* New York: Rinehart, 1950.

Introduction to Programed Instruction. University of Texas.

Edwards, W. D. "Skinner's Teaching Machines." Unpublished Laboratory Note, Maintenance Laboratory AFPTRC, Lowry Air Force Base, Colorado; May, 1956. (Mimeographed).

Eigen, Lewis D. and Komoski, Kenneth. *Automated Teaching Project.* New York: Collegiate School; June, 1960.

Eigen, L. D. The Construction of Frames of an Automated Teaching Program. New York: Collegiate School Automated Teaching Projects; November, 1959.

Eigen, L. D. and Komoski, P. K. *Research Summary Number* 1: Automated Teaching Project. New York: Collegiate School, 1960. (Mimeographed).

Report to the *Foundation* for the Advancement of Education; New York: Center for Programed Instruction; June, 1960.

Emeson, D. L. and Wulff, J. J. "The Relationship Between 'What is Learned' and 'How It's Taught.'" Technical Memorandum, Maintenance Laboratory, AFPTRC, Lowry Air Force Base, Colorado; December, 1957. (ML-TM-57-32).

Estes, W. K. *et al.* *Modern Learning Theory.* A Critical Analysis of Five Examples. New York: Appleton-Century-Crofts, 1954.

Eurich, A. C. "Better Instruction with Fewer Teachers." *Current Issues in Higher Education.* Washington, D.C.: Association for Higher Education, a department of NEA, 1956.

Evans, J. L. "An Investigation of 'Teaching Machine' Variables Using Learning Programs in Symbolic Logic." Doctor's thesis, University of Pittsburgh, 1960. (Typewritten). Also in press (mimeographed) to be issued as a report under a grant to the University of Pittsburgh from the Cooperative Research Program of the U.S. Office of Education.

Evans, J. L.; Glaser, R.; and Homme, L. E. "A Preliminary Investigation of Variation in the Properties of Verbal Learning Sequences of the 'Teaching Machine' Type." Paper read at the Annual Convention of the Eastern Psychological Association; Atlantic City, N.J.; 1959.

Evans, J. L.; Glaser, R.; and Homme, L. E. *The Ruleg* (Rule-Example) *System for the Construction of Programed Verbal Learning Sequences.* Report prepared under Cooperative Research Project #691 (9417). Washington, D.C.: U.S. Office of HEW, 1960. (Mimeographed).

Fattu, N. A. "Training Devices." *Encyclopedia of Educational Research,* third edition. New York: The Macmillan Co., 1960.

Ferster, C. B. *The Role of Review Material in Continuous Programming with Teaching Machines.* Indianapolis: Indiana U. Medical School; December, 1960. U.S.O.E. Project No. 355, U. Microfilms Pub. No. 61-3611.

and Skinner, B. F. *Schedules of Reinforcement.* New York: Appleton-Century-Crofts, 1957.

Filep, Robert Thomas (ed.). "Perspectives in Programming." Proceedings of 1962 Center for Programed Instruction Institutes Conducted at Teachers College, Columbia University; University of California, Berkeley; and University of Chicago. New York: Macmillan, 1963.

Finn, James D. and Perrin, Donald G. *Teaching Machines and Programmed Learning,* 1962: A Survey of the Industry (OE-34019). Report for Technological Development Project of NEA; Washington, D.C.: Superintendent of Documents, U.S. Government Printing Office, 1964.

Folley, J. D., Jr. (ed.). *Human Factors Methods for Systems Design,* Pittsburgh: American Institute for Research, 1960. Includes A. A. Lumsdaine's "Design of Training Aids and Devices."

Foltz, Charles I. *The World of Teaching Machines.* Washington: Electronic Teaching Laboratories, 1961.

Fry, E. B. "Teaching Machine Dichotomy: Skinner Versus Pressey." Paper

BEST COPY AV

read at the annual convention of the American Psychological Association, Cincinnati; September, 1959. (In press, *Psychological Reports*).

. "Teaching Machines: An Investigation of Constructed Versus Multiple-Choice Response Modes." Doctor's thesis, Los Angeles: University of Southern California, 1960.

. *Teaching Machines and Programmed Instruction, an Introduction*. New York: McGraw-Hill Company, Inc., 1963.

Gagné, Robert M. and Bolles, Robert C. "A Review of Factors in Learning Efficiency," *Automatic Teaching*: The State of the Art (ed. by Eugene Falanter). New York: John Wiley and Sons, 1959.

"Teaching Machines and Transfer of Training." Paper read at Symposium on Research Issues in the Study of Human Learning Raised by Developments in Automated Teaching Methods. American Psychological Association Convention, Cincinnati; September, 1959.

Galanter, Eugene (ed.). *Automatic Teaching*: The State of the Art. New York: John Wiley and Sons, 1959.

Garner, Wayne Lee. *Programed Instruction*. New York: Center for Applied Research in Education, The Library of Education, 1966.

Gerbner, George. "Instructional Technology and the Press: A Case Study" (Occasional Paper #4). Report Prepared for Technological Development Project of NEA of U.S., 1961.

Gilbert, T. F. "An Early Approximation of Principles of Analyzing and Revising Self-Instructional Programs." Paper read at the Air Force Office of Scientific Research and University of Pennsylvania Conference on the Automated Teaching of Verbal and Symbolic Skills, Philadelphia; December, 1958. (Unpublished).

. "An Early Approximation to Principles of Programming Continuous Discourse, Self-Instructional Materials." *Psychological Problems and Research Methods in Mathematics Training*. (R. L. Feierabend and P. H. DuBois, eds.).
Washington University, Cooperative Research Project No. 642, USOE; June, 1959. (Mimeographed).

. "An Early Approximation to Principles of Programming Continuous Discourse, Self-Instructional Materials." A Report to Bell Telephone Laboratories; September, 1958. (Unpublished, mimeographed paper).

. "Some Issues Involved in Selecting an Automatic Teaching Device." A Report to the Bell Telephone Laboratories; September, 1958. (Unpublished, mimeographed paper).

. "Some Recent Attempts at the Partial Automation of Teaching." A Report to the University of Georgia, 1958. (Unpublished, mimeographed paper).

Glaser, Robert and Taber, J. I. *Investigation of the Characteristics of Programmed Learning Sequences*. University of Pittsburgh, 1961. Final Report Cooperative Project No. 691.

Glaser, Robert. "Principles and Problems in the Preparation of Programmed Learning Sequences." Paper read at the University of Texas Symposium on the Automation of Instruction, University of Texas; May, 1960. Also, to be published as a report of a Cooperative Research Program Grant to the University of Pittsburgh under sponsorship of the U.S. Office of Education, 1960.

(ed.). *Teaching Machines and Programed Learning II*: Data and Directions. Washington, D.C.: Department of AV Instruction, NEA, 1965.

Goldbeck, R. A.; Campbell, V. A.; and Llewellen, J. E. "Further Experimental Evidences on Response Modes in Automated Instruction." Tech. Report #3, Naval Research Contract No. Non R-3088(00), 1960.

Goodlad, John I. (ed.). *The Changing American School*. The Sixty-fifth Yearbook of the National Society for the Study of Education, Part II. Chicago: NSSE, 1966.

Goodman. *Programmed Learning and Teaching Machines*, second edition. London: English Universities Press, Ltd., 1963.

Grabbe, E.; Ramo, S.; and Wooldridge, D. E. *Handbook of Automation, Computation and Control*, Vol. 1, "Control Fundamentals." New York: John Wiley and Sons, 1958.

Green, Edward. *The Learning Process and Programmed Instruction*. New York: Holt, Rinehart and Winston, Inc., 1962.

Gropper, George L.; Lumsdaine, Arthur A.; and Shipman, Virginia. "Improvement of Televised Instruction Based on Student Responses to Achievement Tests," Studies in Televised Instruction, Report #1. Pittsburgh: Metropolitan Pittsburgh Educational Television Station, WQED-WQEX and American Institute for Research (University Microfilm Pub. No. 62-1079).

Gropper and Lumsdaine. "An Experimental Comparison of a Conventional TV Lesson with a Programmed TV Lesson Requiring Active Student Response," Report #2, USOE Project #336, U. Microfilms Pub. No. 62-1080.

Report #3, "An Experimental Evaluation of the Contribution of Sequencing, Pre-Testing, and Active Student Responses to the Effectiveness of 'Programmed' TV Instruction;" April, 1961. (U. Microfilms Pub. No. 62-1081).

AILABLE

Report #4. "An Investigation of the Role of Selected Variables in Programmed TV Instruction." (U. Microfilms Pub. No. 62-1082).

Report #5. "Issues in Programming Instructional Materials for Televised Presentation." (U. Microfilms Pub. No. 62-1083).

Report #6. "An Evaluation of Television Procedures Designed to Stimulate Extracurricular Science Activities." (U. Microfilms Pub. No. 62-1084). (Also prepared by Willis, Yolanda and Willis, Richard H.)

; Willis, Yolanda; and Willis, Richard H.). Report #7, "The Use of Student Response to Improve Televised Instruction: an Overview." (U. Microfilms Pub. No. 62-1085).

Hanson, L. F. (ed.) *Programs, '63.* Washington, D. C.: National Academy of Sciences, National Research Council, 1961.

Hartung, Joseph Edward. "The Relation of E.Q. and I.Q. to Learning from the Standard Self-Instructional Programs in Spelling and English." St. Louis: Washington University A.M. thesis, Department of Audiology, 1963.

Hatch, Richard S. "An Evaluation of the Effectiveness of a Self-Tutoring Approach Applied to Pilot Training." WADC Technical Report 59-320, Aero Medical Laboratory, Wright-Patterson Air Force Base, Ohio; July, 1959.

Heath, R. W. (ed.). *New Curricula.* New York: Harper and Row, Publishers, Inc., 1964.

Hendershot, Carl H. *Programmed Learning:* a bibliography of programs and presentation devices. Michigan: University Center, 1964.

Hilgard, Ernest R. (ed.) *Individualized Instruction,* The 1964 Yearbook of the National Society for the Study of Education. Chicago: NSSE, 1964.

"Learning Theory and Its Applications," *New Teaching Aids for the American Classroom.* Stanford University, California: The Institute for Communication Research, 1960, pp. 19-26.

(ed.) *Theories of Learning and Instruction,* The Sixty-third Yearbook of the National Society for the Study of Education, Part I. Chicago: NSSE, 1964.

Holland, James G. and Skinner, B. F. *The Analysis of Behavior.* New York: McGraw-Hill Book Co., Inc., 1961.

and "A Self-Tutoring Introduction to a Science of Behavior." Cambridge, Mass.: Psychological Laboratories, Harvard University, circa 1958-59. (Unpublished manuscript).

Hough, John Burr. "An Analysis of the Effectiveness and Efficiency of Selected Aspects of Teaching Machine Instruction." Unpublished doctoral dissertation, Temple University, 1961.

Hovland, C. J.; Lumsdaine, A. A.; and Sheffield, F. D. *Experiments on Mass Communication.* Princeton, N.J.: Princeton University Press, 1949.

"How Coronet Learning Programs are Field Tested," A Learning Inc. Research Project. Chicago: Coronet Learning Programs, Coronet Instructional Films. (A pamphlet).

"How Coronet Learning Programs are Prepared and Tested." Coronet Learning Programs, Coronet Instructional Films, Chicago, Ill. (A pamphlet).

Hughes, J. L. *Programed Instruction for Schools and Industry.* Chicago: Science Research Associates, Inc., 1961.

Hughes, John Leo. *Programed Learning:* a Critical Evaluation. Chicago: Educational Methods, 1963.

Israel, M. L. "Skinnerian Psychology and Educational Redesign." Paper read at the 1958 Symposium sponsored by the American Psychological Association Committee on the Relations Between Psychology and Education; Washington, D.C.; September, 1958.

Iverson, Kenneth E. *A Programming Language.*

Krislar, E. R. "Theoretical Aspects of Automated Teaching." Paper read at the annual convention of the Western Psychological Association; San Diego, California, April, 1959. (Unpublished).

Komoski, K. P. "Origin of Collegiate School Automated Teaching Project." New York: Collegiate School, February, 1960. (Unpublished report).

Kumboltz, J. D. (ed.). *Learning and the Educational Process.* Chicago: Rand-McNally and Co., 1965.

Lambert, Philip (ed.) *The Teacher and the Machine.* Madison, Wisconsin: Dembar Educational Research Services, Inc., 1962. Originally a group of articles which first appeared in the *Journal of Educational Research* (June, 1962).

Leverenz, Humboldt W. and Townsley, Malcolm G. *The Design of Instructional Equipment:* Two views. Washington: NEA of U.S.; Technological Development Project, 1963.

Levin, Gerald R. "Principles of Programing Materials for Teaching Machines and Their Relation to Transfer of Training." Providence, R.I.: Brown University, n.d. USOE Title VII Project No. 538, U. Microfilms Pub. No. 63-2859.

AV Communications Review Title VII Research Abstracts: Installment 5; November-December, 1962.

Lumsdaine, Arthur A. "The Development of Teaching Machines and Programmed Self-Instruction," *New Teaching Aids for the American Class-*

BEST COPY A

room. Stanford University, California; The Institute for Communication Research, 1960, pp. 136-73.

. "Possibilities and Implications of Automated Teaching Methods." Paper read at Symposium on Automation of Teaching, at the annual convention of the American Psychological Association, Washington, D.C.; August, 1958. (Unpublished).

. "Response Cueing, and 'Size-of-Step' in Automated Learning Programs." Paper read at Symposium on Research Issues in the Study of Human Learning Raised by Developments in Automated Teaching Methods, American Psychological Association Convention; Cincinnati, Ohio; September, 1959. (Unpublished).

and Glaser, Robert. *Teaching Machines and Programmed Learning: A Source Book.* Washington, D.C.: Department of Audio-Visual Instruction, NEA, 1960.

Includes a list by Ibert Mellan of Patents Relating to the Teaching of Music, pp. 268-69.

Lumsdaine, Arthur H. *Student Response in Programmed Instruction: A Symposium on Experimental Studies of Cue and Response Factors in Group and Individual Learning from Instructional Media.* Washington, D.C.: National Academy of Sciences, National Research Council, 1961.

Lysaught, Jerome P., and Williams, Clarence M. *A Guide to Programmed Instruction.* New York: John Wiley and Sons, 1963.

(ed.). *Programmed Learning;* evolving principles and industrial applications. Ann Arbor, Michigan; 1961.

McLuhan, M. "What Fundamental Changes are Foreshadowed in the Prevailing Patterns of Educational Organization and Methods of Instruction by the Revolution in Electronics?" *Current Issues in Higher Education, 1959.* Washington, D.C.: Association for Higher Education, a department of the NEA, 1959, pp. 176-82.

McNeil, J. D. "The Great Didactic and Automated Teaching." Los Angeles, University of California, 1960. (Unpublished paper).

Mager, Robert F. "Preliminary Studies in Automated Teaching." Proceedings of the Institute of Radio Engineers; October, 1959.

. *Preparing Instructional Objectives.* Palo Alto: Fearon Publishers, 1962.

. *Preparing Objectives for Programmed Instruction.* San Francisco: Fearon Publishers, 1962.

Margulies, Stuart and Eigen, Lewis. *Applied Programed Instruction.* New York: John Wiley and Sons, Inc., 1962.

Markle, Susan Meyer. *Good Frames and Bad; A Grammar of Frame Writing.* New York: John Wiley and Sons, 1964.

Markle, Eigen, and Komoski. *A Programed Primer on Programing.* Vols. I and II. New York: Teachers College Press.

May, Kenneth Ownsworth. *Programmed Learning and Mathematical Education.* A CEM Study. San Francisco: Committee on Educational Media, Mathematical Association of America, 1965.

Meachum. *Programmed Instruction Training Manual.* J. Ravin Publications.

Melton, A. W. "Some Comments on 'The Impact of Advancing Technology on Methods in Education,' by Simon Ramo." September, 1959. (Unpublished).

Miles, Matthew B. (ed.). *Innovation in Education.* New York: Teachers College, Columbia University, 1964.

Mills, Annice L. (ed.). *Programed Learning and the Educational Process.* New York: Thomas Alva Edison Foundation, 1961.

Milton and West. *Programmed Instruction:* What it is and How it Works. Holt, Rinehart, and Winston Inc.

Mitchell, M. B. "Education — A New Era Begins." Reprint of a speech. Chicago: Encyclopedia Britannica Films; May, 1958.

Morton, F. R. "The Language Laboratory as a Teaching Machine." *Language Teaching Today* (F. J. Oinas, ed.). A Report of the Language Laboratory Conference held at Indiana University; January 22-23, 1960. Publication No. 14 of the Indiana University Research Center in Anthropology, Folklore, and Linguistics, 1960.

Nelson, C. W. *The Multiple Purpose Self-Trainer.* Park Forest, Ill.: Management Research Associates, 1954.

Odell, William. "How Teachers Can Evaluate Teaching Machines and Learning Programs," Report 2 (free pamphlet). New York: Teaching Machine Corp., division of Grolier, Inc.

Ofiesh, Gabriel D. *Programed Instruction;* a guide for Management (also prepared by Joseph A. Tucker, Jr., and Jerome P. Lysaught). New York: American Management Association, 1965.

and Meierhenry, Wesley C. (eds.). *Trends in Programmed Instruction.* Washington, D.C.: Department of Audiovisual Instruction, NEA and NSPI, 1964.

A Parents Guide to Teaching Machines and Programed Instruction, "What is a 'Program' of Instruction." New York: Center for Programed Instruction, Inc., 1962.

Pask, G. "Teaching Machines." Solartron Electronic Group, Limited, 1958 (Unpublished, mimeographed paper).

Pipe, Peter. *Practical Programming.* New York: Holt, Rinehart, and Winston, 1966.

AILABLE

Pressey, Sidney L. "Educational Acceleration: Appraisals and Basic Problems." Bureau of Educational Research Monograph No. 31, Columbus: The Ohio State University, 1949.

"Further Attempts to Develop a 'Mechanical Teacher.'" Paper read at the annual convention of the American Psychological Association, Philadelphia, September, 1946. (Unpublished). Abstracts in *The American Psychologist*, 1, July, 1946.

and Robinson, F. P. Psychology and the New Education. New York: Harpers, 1944.

"A Simple Apparatus Which Gives Tests and Scores — and Teaches," in *Teaching Machines and Prog. Learning* (ed. by Lumsdaine and Glaser). Washington, D.C.: NEA, 1960 (also includes an article by Skinner).

"Some History Regarding Self-Instructional Devices." Paper read at Symposium on the Automation of Teaching, American Psychological Association Convention, Washington, D.C.: Aug., 1958.

Programed Instructional Materials, 64-65. New York: Teachers College Press, The Center for Programmed Instruction.

"Programer, Teach Thyself," descriptive paragraph in *AV Comm. Rev.*, 10; January-February, 1962, p. 69 of a mimeographed booklet explaining the reasons for a single "m" in "programer," etc. Free from The Center for Programed Instruction, New York.

Programs '63, A Guide to Programed Instructional Materials. Washington, D.C.: Superintendent of Documents, U.S. Govt. Printing Office, OE-34015-63.

Programs 1964-1965. Center for Programed Instruction, Institute of Educational Technology, Teachers College, Columbia University, New York. York.

Ramo, Simon. "A New Technique of Education." Institute of Radio Engineers Transaction on Education E-1, 37-42, 1958.

"The Impact of Advancing Technology on Methods in Education." Paper read at the annual convention of the American Psychological Association, Cincinnati, September, 1959.

Raymond, R. C. "The Need for Labor-Saving Machinery in Education." Reprint of a speech. Technical Military Planning Operation, General Electric Company, Santa Barbara, California; February, 1957.

Rigney, Joseph W. and Fry, Edward B. "Current Teaching-Machine Programs and Programming Techniques," Supplement 3, *Audio-Visual Communications Review.* Washington, D.C.: Department of AV Instruction, NEA, 1961.

; Bryan, G. L.; and Svenson, D. W. "The Multiple Choice Item as a Training Device." Paper read at the annual convention of the American Psychological Association, Chicago; September, 1956. (Unpublished).

and Fry, E. G. "A Survey and Analysis of Current Teaching-Machine Programs and Programming," Technical Report #31, Los Angeles: University of Southern California, Department of Psychology, 1961.

Root, R. T. "An Annotated Bibliography of Research on Training Aids and Training Devices." Staff Memorandum, Training Methods Division, HumRRO, George Washington University, Washington, D.C.; August, 1957.

Ross, Wilbur L., Jr. *et al. Teaching Machines*: Industry Survey and Buyer's Guide. New York: The Center for Programed Instruction, Inc., 1962.

Rothkopf, E. Z. *Improving the Efficiency and Quality of Learning.* Washington, D.C.: American Council on Education, 1962.

Roucek, Joseph (ed.) *Programmed Teaching* — A Symposium on Automation in Teaching. New York: Philosophical Library.

Sales Training. Selling Programmed Instruction. Learning Inc.

Sax, G. "Concept Acquisition as a Function of Differing Schedules and Delays of Reinforcement," doctor's thesis, Los Angeles: University of South California, 1958. (Typewritten).

Schramm, Wilbur. *Programed Instruction in Denver*, Four Case Studies of Programed Instruction. New York: The Fund for the Advancement of Education, 1964.

Programed Instruction Today and Tomorrow. The Fund for the Advancement of Education, 1962.

(ed.) *The Research on Programed Instruction*, OE-34034. U.S. Department of HEW, Office of Education, U.S. Govt. Printing Office, Washington, D.C., Bulletin 1964, #35.

Selection and Use of Programed Materials. Washington, D.C.: NEA, Division of Audiovisual Instructional Service, 1964.

Severin, D. G. "Appraisal of Special Tests and Procedures Used with Self-Scoring Instructional Testing Devices." *Abstracts of Doctoral Dissertations* 66: 323-30. Columbus: The Ohio State University Press, 1955.

Silberman, H. F. "The Automation of Teaching." *Behaviorial Science*, 1960.

"Introductory Description of Teaching Machines (Physical Characteristics)." Paper read at Symposium on Automated Teaching. Western Psychological Association Convention, San Diego, California; April, 1959. (Unpublished).

BEST COPY AV

Silvern, Leonard C. "Are We Ready for Teaching Machine Curriculums . . . Yes!" (An in-company publication). Code #5.1.2; Education and Training Consultants Co. and Hughes Aircraft Co.

. *Computer-Assisted Instruction* (with S. M. Silvern). New York: J. Wiley and Sons, 1965.

. "CAI in an Expanding Universe of Educational Methodology," chapt. *Conversational Computers* (ed. W. D. Orr). New York: J. Wiley and Sons, 1967.

. *Fundamentals of Teaching Machine and Programmed Learning Systems* (3 vols.). Los Angeles: Education and Training Consultants; February, 1964 (ETC Programmer's Kit, Course #1).

. "The Influence of Teaching Machine Technology on Electronic Systems Maintenance Training," *Transactions*, Human Factors in Electronics, Institute of Radio Engineers; September, 1961 (short version), Code #5.6.4; long version included in *Applied Programed Instruction* (ed. by Margulies and Eigen; J. Wiley and Sons).

. *Programmer's Kit USC/UCLA Edition* (9 courses) Education and Training Consultants.

. *Programer's Kit* (Advanced) (Hughes Edition)—12 courses Education and Training Consultants.

. "The Teaching Machine for Employee Development," *Personnel Journal*; March, 1961; Code #5.6.1.

. "Teaching Machine Technology," chapt. in *The Encyclopedia of Management* (ed. C. Heyel), Reinhold, 1964.

. "Now . . . the Teaching Machine," *Vectors*, First Quarter 1961. Code #5.6. 11, ETC and Hughes Aircraft Co.

. "Programmed Instruction and Computer-Assisted Instruction — How They Can be Used Effectively in Our Training Programs," Society of Automatic Engineers; April, 1967.

. "Programmed Learning — Its Essential Elements," *Report*, College of Preceptors (British), 1964. Also ETC, Code #9.3.10.

. "Teaching a Graduate-Level University Course in Methods of Computer-Assisted Instruction," (with G. M. Silvern). Chapt. in *Automated Educational Systems* (ed. E. Haga), Business Press. Abridgement in *Transactions*, G-HPE, Institute of Electrical and Electronics Engineers; March, 1967.

. "Teaching Machines and Programmed Instruction," Centrex; Eindhoven, Netherlands, November, 1962.

. "Teaching Machine Technology and its Relation to Stimulation." Utah Education Association in-company presentation — 64th Annual Conference; October 5, 1961. ETC and Hughes Aircraft Co.

Skinner, Burrhus Frederic. "Comments on 'The Impact of Advancing Technology on Methods in Education' by Dr. Simon Ramo." September, 1959. (Unpublished).

. *Cumulative Record*. New York: Appleton-Century-Crofts, 1959.

. *Harvard Teaching Machine Project*. Harvard University, Cambridge, Mass.; 1961. Interim Report O. E. Grant No. 719051.

. "Report #1 on the Development of Methods of Preparing Materials for Teaching Machines." Unpublished Report to Human Resources Research Office; January, 1957.

. "Report #2 on the Development of Methods of Preparing Materials for Teaching Machines." Unpublished Report to Human Resources Research Office; April, 1957.

. "Final Report to Human Resources Research Office." Unpublished report to Human Resources Research Office; Oct., 1957.

. "Programming Verbal Knowledge for Automated Instruction in Schools and Colleges." Paper read at Symposium on the Automation of Teaching, American Psychological Association Convention, Washington, D.C.; August, 1958. (Unpublished).

. *Science and Human Behavior*. New York: Macmillan, 1953.

. "The Science of Learning and the Art of Teaching," *Current Trends in Psychology and the Behavioral Sciences*. Pittsburgh: University of Pittsburgh Press, 1954.

. "The Use of Teaching Machines in College Instruction." Final Report to the Fund for the Advancement of Education; August, 1958.

. *Verbal Behavior*. New York: Appleton-Century-Crofts, Inc., 1957.

. *Verbal and Human Behavior*. New York: Macmillan, 1953.

Smallwood, Richard D. "A Decision Structure for Teaching Machines," a monograph. Cambridge: MIT Press, 1962.

Smith, Karl U. and Smith, Margaret Foltz. *Cybernetic Principles of Learning and Educational Design*. New York: Holt, Rinehart and Winston, Inc., 1966.

Smith, Lawrence R.; Hammar, Russell A.; and Ray, Harry B. "Great Lakes College Association Programmed Instruction Project." (Unpublished).

Smith, Wendell Irving and Moore, William J. (eds.) *Programmed Learning theory and research, an enduring problem in psychology . . .* Princeton, N.J.: Van Nostrand, 1962.

Smith, Wendell and Moore, J. William. "Size-of-Step and Achievement in Programed Spelling." USOE Title VII Project #485. University Microfilms Pub. No. 62-2622. Title VII Research Abstract in *AV Comm. Rev.* Installment 4, May-June, 1962, pp. A-97 — A-98.

AILABLE

Stoddard, A. J. *Schools for Tomorrow*. New York: The Fund for the Advancement of Education, 1957.

Stolurow, L. M.; Jacobs, Paul I.; and Maier, Milton H. *A Guide to Evaluating Self-Instructional Programs*. New York: Holt, Rinehart and Winston, 1966. Pp. 24-25 contain a bibliography of films and film strips on programed instruction and teaching machines.

Stolurow, Lawrence M. *Teaching by Machine* (OE-34010 Cooperative Research Monograph #6). Washington, D.C.: Superintendent of Documents, U.S. Govt. Printing Office, 1961.

"Teaching Machines and Special Education." An unpublished report of work sponsored by the U.S. Office of Education Cooperative Research Project performed at the University of Illinois, 1960.

Taber, Julian I.; Glaser, Robert; and Schaefer, Halmuth H. *Learning and Programmed Instruction*. Reading, Mass.: Addison-Wesley, 1965.

Thomas, C. A.; Davies, I. K.; Openshaw, D.; and Bird, J. B. *Programmed Learning in Perspective — A Guide to Programmed Writing*. Great Britain: Lamson Technical Products, Ltd., 1963.

et al. *Programmed Learning in Perspective*, a guide to program wirting. (Foreword by Lawrence M. Stolurow). Chicago: Educational Methods, 1963.

Thomas, Gilbert F. "An Early Approximation of Principles of Analyzing Self-Instructional Programs." Paper presented at Conference on Teaching Machines. University of Pennsylvania. December, 1958.

Training Research Laboratory, University of Illinois. *A Bibliography of Programed Instruction and Teaching Machines*. In progress in 1965 for Office of Education.

U.S. Navy, Naval Training Device Center. *Bibliography of Unclassified Human Engineering Reports*. Port Washington, N.Y.: The Center, January, 1958.

U.S. Air Force, Air Force Personnel and Training Research Center. *Index to Air Force Personnel and Training Research Center Technical Documentary Reports* (1957 and 1958). Lackland Air Force Base, Texas: The Center, March, 1958.

U.S. Navy, Naval Training Device Center. *Training Device Guide* (formerly *Special Devices Guide*). Revised edition. Port Washington, N.Y.: the Center, NAVEXOS. November, 1957.

Use of Programed Instruction in U.S. Schools 62-63. The Center for Programed Instruction. Washington, D.C.: Commissioner of Education, Department of HE & W, if available.

"Wiley and Programmed Instruction," pamphlet (part advertisement). New York: John Wiley and Sons, Inc.

Young, Michael. *Innovation and Research in Education*. London: Routledge and Kegan Paul, 1965.

Zeeman, D. "Comments on the Automation of Teaching." Presented at Symposium on the Automation of Teaching, American Psychological Association Convention, Washington, D.C.: August, 1958.

B. *Articles, Periodicals, etc.*

Adkins, D. C. "Measurement in Relation to the Educational Process," *Educational and Psychological Measurement*, Vol. 18 (Summer, 1958), pp. 221-40.

Aid, published monthly (Paschal Strong, ed.). Lubbock, Texas: Institute of International Research and Development, Inc., April, 1961-.

Angell, G. W. "The Effect of Immediate Knowledge of Quiz Results on Final Examination Scores in Freshman Chemistry," *Journal of Educational Research*, Vol. 42, January, 1949, pp. 391-94.

and Troyer, M. E. "A New Self-Scoring Test Device for Improving Instruction," *School and Society*, Vol. 67 (January 31, 1948), pp. 66-68.

Audiovisual Instruction. Especially February, 1963, pp. 84-89.

"Automation in Education, Machines and Men as Teachers and Learners." A Symposium, *Teachers College Record*, December, 1960.

Barlow, J. A. "Project Tutor," *Psychological Reports*, 6, 15-20, 1960.

Beringause, Arthur F. "The Teaching Machine," High Points, XLIII (May, 1961), pp. 21-24.

Blyth, John W. "Teaching Machines and Human Beings.," *Educational Record*, Vol. 41, April, 1960.

"Teaching Machines and Logic." *American Mathematical Monthly*, Vol. 67 (March, 1960).

Briggs, L. J. "Intensive Classes for Superior Students." *J. of Educ. Psychol.*, Vol. 38, 1947, pp. 207-15.

"Two Self-Instructional Devices." *Psychological Reports*, Vol. 4 (December, 1958), pp. 299-304.

Broudy, Harry S. "Socrates and the Teaching Machine." *Phi Delta Kappan*, XLIV, March, 1963.

Burns, Richard W. and Craik, Mary B. "Factors for Consideration in Program Selection." *Teaching Aids News*, Vol. IV (July 15, 1964).

Bushnell, Don D. "For Each Student a Teacher." ("The New Computerized Age"). *Saturday Review*, July 23, 1966, p. 31.

Campbell, Vincent. "Bypassing as a Way of Adapting Self-Instructional Programs to Individual Difference." *Journal of Educational Psychology*, Vol. 54, No. 6 (December, 1963), pp. 337-45.

Carpenter, F. "How Will Automated Teaching Affect Education?" *The*

BEST COPY

University of Michigan School of Education Bulletin, October, 1959.

Cartier, Francis A. "The Learning Process and Programmed Instruction" (Ed. J. Green), a book review. *AV Comm. Review*, 10 (November-December, 1962), pp. 349-50.

Cavanaugh, P. *et al.* "The Auto Tutor and Classroom Instruction: Three Comparative Studies," *Occupational Psychology*, 37 (January, 1963).

Clark, J. F. "Programmed Learning: My First Six Months," *The Mathematics Teacher*, 55 (1962), pp. 579-581.

"Computer to Teach First Grade," *The N.Y. Times*, July 29, 1966, p. 39.

"Computerized Classrooms Are Almost Here," *Changing Times*, The Kiplinger Magazine (March, 1967), pp. 24-28.

Cook, Desmond L. "Programed Instruction and AV Personnel," *AV Comm. Rev.*, 10 (July-August, 1962).

Corrigan, R. E. "Automated Teaching Methods," *Automated Teaching Bulletin I*: December, 1959, pp. 23-30.

Coulson, J.E.; and Silberman, R. F. "Effects of Three Variables in a Teaching Machine," *J. Educational Psychology*, 51 (1960).

and . "A Draft Summary of Findings in an Exploratory Teaching Machine Study," *Automated Teaching Bulletin I*, 1959, pp. 35-39.

"Criteria for Assessing Programed Instructional Materials, 1962," Interim Report of the Joint Committee on Programed Instruction and Teaching Machines. American Educational Research Association; American Psychological Association; NEA, Department of AV Instruction. Reprinted in *Audio-visual Instruction*, 8, 1963, pp. 84-89.

Cronbach, Lee J. "Programed Learning," *NEA Journal*, 51, December, 1962, p. 45.

Crowder, Norman A. "On Differences Between Linear and Intrinsic Programing," *Delta Phi Kappan*, XLIV, March, 1963.

Crutchfield, Richard S. and Covington, Martin. "Programed Instruction and Creativity," *Programed Instruction*, 4, January, 1965, lff.

"Current Teaching-Machine Programs and Programming Techniques," *AV Comm. Rev.*, 9 (May-June, 1961); Supplement 3 (Chakerian-Ventolo music text is excerpted, pp. 86-90).

Dale, Edgar. "Educating for Flexibility," *The News Letter*, XXVIII (January, 1963), p. lff.

. "Self-Instruction Through Programed Materials," *The News Letter, XXVI* (February, 1961).

Darby, C. L. "An Annotated Bibliography on the Automation of Teaching." Research Memorandum, U.S. Army Aid Defense Human Research Unit, Fort Bliss, Texas (July, 1959). (Unpublished, mimeographed paper).

Educational Technology (formerly Teaching Aids News). Saddle Brook, N.J.: Educational News Service, 1961- .

Eigen, Lewis D. "Some Problems in Field Testing Programs," *Journal of Educational Sociology*, 34 (April, 1961).

Ellert, E. E. "Willing and A-ble," *Overview*, 4 (February, 1963), pp. 72-74.

Esbensen, Thorwald. "The Programmer as Artist," *AID*, 2 (November, 1962).

Filep, Robert T. "Autumn Overture," *CPI Bulletin*, 2 (September-October, 1962), p. 7.

Finn, J. D. "Automation and Education: III, Technology and the Instructional Process," *AV Comm.* Rev., 8 (Winter, 1960), pp. 5-26.

. "Automation and Education: I, General Aspects," *AV Comm. Rev.*, 5 (Winter, 1957), pp. 343-60.

. "Automation and Education: II, Automatizing the Classroom — Background of the Effort," *AV Comm. Rev.*, 5 (Spring, 1957), pp. 451-67.

. "From Slate to Automation," *AV Instruction*, 4 (March, 1959), pp. 84-85, 100-101.

. "A Look at the Future of Audio-Visual Communication," *AV Comm. Rev.*, (Fall, 1955), pp. 244-58.

and Richardson, Elinor. "The Principal Faces the New Technology," *The National Elementary Principal*, XL, January, 1961.

Flynt, R. C. M. and Hollis, E. V. "Use of Training Aids by Army and Navy," *Higher Education*, 2 (September, 1945), pp. 1-3.

Fry, Edward B.; Bryan, Glenn L.; and Rigney, Joseph W. *Teaching Machines*: An Annotated Bibliography. Washington, D.C.: Department of AV Instruction, 1960 (see Supplement 1 of *AV Comm. Rev.* 8/2).

. "Teaching Machines: An Investigation of Constructed versus Multiple-choice Methods of Response," *Automated Teaching Bulletin I*; December, 1959, pp. 11-12.

. "Teaching Machines: The Coming Automation," *The Phi Delta Kappan*, 41 (October, 1959), pp. 28-31.

Gagné, R. M. "Training Devices and Simulators: Some Research Issues," *American Psychologist*, 9 (March, 1954), pp. 95-107.

Geis, George L. "Some Considerations in the Evaluation of Programs," *AV Comm. Rev.*, 10 (January-February, 1962), pp. 64-69.

and Peyser, Charles S. "A Survey of Reactions of College Students to a Program in Introductory Psychology," *AID*, 3 (January, 1963).

VAILABLE

Gerbner, George. "Notes and Comment," (on Mager's *Preparing Objectives for Programmed Instruction*). *AV Comm. Rev.*, 10 (May-June, 1962), pp. 191-92.

Gilbert, A. C. F. "Effect of Immediacy of Knowledge of Correctness of Response Upon Learning," *Journal of Ed. Psych.*, 47 (November, 1956), pp. 415-23.

Gilbert, Thomas F. "Mathematics: The Technology of Education," *The Journal of Mathematics*, 1 (January, 1962), pp. 7-73.

Gilpin, John B. "Programming a Basic Foreign Language Course: Prospects for Self-Instruction," (Fernand Marty, book review), *AV Comm. Rev.*, 10 (July-August, 1962), pp. 269-71.

Gilroy, Harry. "Electronics and Books: Merger Path," *The N.Y. Times*, February 6, 1966, p. 1F.

Golbeck, Robert A. and Campbell, Vincent N. "The Effects of Response Mode and Response Difficulty on Programed Learning," *Journal of Educational Psychology*, 53 (June, 1962), pp. 110-118.

Goldiamond, Israel. "A Research and Demonstration Procedure in Stimulus Control, Abstraction, and Environmental Programming," *J. exp. Anal. Behavior*, 7, 1964, 216.

Goldstein, Leo and Gotkin, Lamar. "A Review of Research: Teaching Machines vs. Programed Textbooks as Presentation Modes," *Journal of Programed Instruction*, 1, 1962,, pp. 29-36.

Grieder, Calvin. "The Place and Value of Teaching Machines," *The Nation's Schools*, 67 (May, 1961).

Harvard Educational Review, various issues.

Hechinger, Fred M. "On the Automated Classroom," *The N. Y. Times*, June 19, 1966, p. 8E.

Hively, W. "Implications for the Classroom of B. F. Skinner's Analysis of Behavior," *Harvard Educational Review*, 29 (Winter, 1959), pp. 37-42.

Hoerger, James W. "Minnetonka," *High Points*, XLIII, May, 1961, pp. 25-30.

Holland, James G. "Teaching Machines: an Application from the Laboratory," *J. exp. Anal. Behavior*, 3, 1960, pp. 275-287.

Holz, W. C. and Azrin, N. H. "A Comparison of Several Procedures for Eliminating Behavior," *J. exp. Anal. Behavior*, 6, 1963, pp. 399-406.

Homme, Lloyd E. "Research Notes," *Automated Teaching Bulletin*, 1, September, 1959.

Hough, John B. "Research Vindication for Teaching Machines," *Phi Delta Kappan*, XLII, 6 (March, 1962), pp. 240-42. Research Abstract also in *AV Comm. Rev.*, 10 (May-June, 1962), pp. 201-202.

Hughes, J. L. and McNamara, W. J. "A Comparative Study of Programmed and Conventional Instruction in Industry," *Journal of Applied Psychology*, 45 (August, 1961), pp. 225-31. *AV Comm. Rev.*, 10 (January-February, 1962), pp. 59-60.

Ihrke, Walter H. and . "The Effect of Intermittent Confirmation in Programed Instruction," *Journal of Educ. Psychology*, 53 (December, 1962), pp. 250-53.

Israel, M. L. "Educational Redesign: A Proposal," *School Review*, 67, 1959, pp. 292-304.

Jacobs, Paul I. "Some Relationships Between Testing and Auto-Instructional Programing," *AV Comm. Rev.*, 10 (November-December, 1962), pp. 317-27.

Jensen, A. R. "Teaching Machines and Individual Differences," *Automated Teaching Bulletin*, 1, 1960, pp. 12-17.

Journal of Programed Instruction, A Quarterly of Behaviorial Technology in Education, 1962- ; Center for Programed Instruction; Institute of Educational Technology, Teachers College, Columbia University, New York.

Keislar, Evan R. and McNeil, John D. "A Comparison of Two Response Modes in an Auto-Instructional Program with Children in the Primary Grades," *Journal of Educational Psychology*, 53 (June, 1962), pp. 127-31.

, "The Development of Understanding in Arithmetic by a Teaching Machine," *Journal of Educational Psychology*, 50 (December, 1959), pp. 247-253.

Kelleher, R. T. and Gollub, L. R. "A Review of Positive Conditioned Reinforcement," *J. exp. Anal. Behavior*, 1962, Vol. 5, pp. 543-97.

Klaus, David J. "The Art of Auto-Instructional Programming," *AV Comm. Rev.*, IX (March-April, 1961), pp. 130-42.

Klaw, Spencer. "What Can We Learn From Teaching Machines?" *The Reporter*, July 19, 1962.

Komoski, P. Kenneth. "Teaching Machines and Programmed Learning" Lumsdaine and Glaser, (eds.), a book review, *AV Comm. Rev.*, 9 (July-August, 1961), pp. 212-14.

Krumboltz, John D. and Weisman, Ronald G. "The Effect of Overt Versus Covert Responding to Programmed Instruction on Immediate and Delayed Retention," Research Abstract in *AV Comm. Rev.*, 10 (July-August, 1962), p. 285. Also in *Journal of Educ. Psych.*, 53 (April, 1962), pp. 89-92.

Leedham, J. "Teaching Machines," *The Teacher*, March 8, 1963.

Leonard, George B. "Revolution in Education," *Look*, June 5, 1962.

Levin, Gerald R. and Baker, Bruce L. "Item Scrambling in a Self-Instruc-

BEST COP

tional Program," *Journal of Educational Psychology*, 54 (June, 1963), pp. 138-43.

Little, J. K. "Results of Use of Machines for Testing and for Drill, Upon Learning in Educational Psychology," *J. of Experimental Education*, 3, 1934, pp. 45-49.

Lumsdaine, A. A. "Keeping Up With the Field," *AV Comm. Rev.*, 9 (November-December, 1961), pp. 296-97.

. "Some Critical Issues in the Improvement of Instruction Through Programed Learning," *AV Comm. Rev.*, 10 (January-February, 1962), pp. 61-64.

. "Systematic Coverage for a New Educational Field," *AV Comm. Rev.*, 9 (March-April, 1961), pp. 129-30.

. "Teaching Machines and Auto-Instructional Programs," *Educational Leadership*, 18 (February, 1961), pp. 271-77.

McClellan, James. "Inside Opinion," *CPI Bulletin*, 1; May, 1961.

McGarvey, Paul. "Programmed Instruction in Ninth-grade Algebra," *The Mathematics Teacher*, 55, 1962, pp. 576-78.

Mager, Robert F. "Preparing Objectives for Programed Instruction," *AV Comm. Rev.*, 10 (May-June, 1962), pp. 189-90.

.,"Teaching: Today and Tomorrow," *IRE Student Quarterly* (September, 1959), pp. 31-37.

. "What Are Teaching Machines Doing to Teaching?" *AV Comm. Rev.*, 9 (November-December, 1961), pp. 300-305.

Markle, Susan Meyer. "Teaching Machines Versus Programers," *AV Comm. Rev.*, 10 (July-August, 1962), pp. 286-92.

Marks, Merle B. "Better Directions — Better Response, " *AV Comm. Rev.*, 10 (May-June, 1962), pp. 169-75.

Melton, A. W. "The Science of Learning and the Technology of Educational Methods," *Harvard Educational Review*, 29 (Spring, 1959), pp. 96-106.

Moore, R. and Goldiamond, I. "Errorless Establishment of Visual Discrimination Using Fading Procedures," *J. exp. Anal. Behavior*, 7, 1964, pp. 269-72.

NSPI Journal.

"New 35-mm. Slide System Aims at Education, Industry," *The N.Y. Times*, March 13, 1966, p. 13F.

Newman, S. E. "Student Versus Instructor Design of Study Method," *Journal of Educational Psychology*, 48 (October, 1957), pp. 328-33.

Nolan, J. A. and Hosmer, C. L. "Time Saved by a Tryout of Automatic Tutoring," *Automated Teaching Bulletin*, 1960, Vol. 1, pp. 17-19.

Pask, G. "Automatic Teaching Techniques," *British Communications and Electronics*, Vol. 4, 1957, pp. 210-11.

. "Report of Symposium Papers at Conference on Automata Held in Tedingham, England," *Automation Progress*, 4/2, circa 1957.

. "The Self Organizing Teacher," *Automated Teaching Bulletin*, 1 (December, 1959), pp. 13-16 (see Rheem Manufacturing Company).

. "The Teaching Machine," *The Overseas Engineer*, February, 1959, pp. 231-32.

Peins, M. "Mechanical Devices in the Classroom," *Elementary English*, 28 (March, 1951), pp. 138-40.

Perrin, Donald G. "Notes and Comment," *AV Comm. Rev.*, 10 (November-December, 1962), pp. 350- .

Peterson, J. C. "A New Device for Teaching, Testing, and Research in Learning," *Transactions of the Kansas Academy of Science*, 33, 1930, pp. 41-47.

Porter, Douglas. "A Critical Review of a Portion of the Literature on Teaching Devices," *Harvard Educational Review*, 27, November, 1957.

Pressey, Sidney L. "Development and Appraisal of Devices Providing Immediate and Automatic Scoring of Objective Tests, and Concommitant Self-Instruction," *J. of Psychology*, 29, 1950, pp. 417-47.

. "A Machine for Automatic Teaching of Drill Material," *School and Society*, 25 May, 1927.

. "A Third and Fourth Contribution Toward the Coming 'Industrial Revolution' in Education," "*School and Society*, 36, November, 1932.

Price, G. R. "The Teaching Machine," *Think*, 25, March, 1959, pp. 10-14.

Programed Instruction, 1961- .

Ramo, Simon. "A New Technique of Education," *Engineering and Science Monthly*, 21 (October, 1957), pp. 17-22.

Rheem Manufacturing Company, *Automated Teaching Bulletin*, 1 (September, 1959), pp. 1-28.

. *Automated Teaching Bulletin*, 2 (December, 1959).

Richardson, M. W. and Kuder, G. F. "The Calculation of Test Reliability Coefficients based on the Method of Rational Equivalents," *Journal of Educational Psychology*, XXX (December, 1959), pp. 681-87.

Richardson, M. W. and . "The Theory of the Estimation of Test Reliability," *Psychometrika*, XI, 1937, pp. 151-60.

Robinson, Donald W. "Programed Instruction: Gimmick or Breakthrough?" *Phi Delta Kappan*, 44 (March, 1963).

Rocklyn, Eugene H. and Moran, Richard I. "A Special Machine-Taught

AVAILABLE

Oral-Aural Russian Language Course: A Feasibility Study," *AV Comm. Rev.*, 10 (March-April, 1962), pp. 132-36.

Roe, Arnold. "Automated Teaching Methods, Using Linear Programs," *Journal of Applied Psychology* (June, 1962), 46/3, p. 198-201. Research Abstract in *AV Comm. Rev.*, 10 (November-December, 1962), p. 357.

Roe, K. V.; Case, H. W.; and Roe, A. "Scrambled vs. Ordered Sequence in Auto-Instructional Programs," *Journal of Educational Psychology*, *53 (April, 1962), pp. 101-04. Research Abstract in AV Comm. Rev.*, 10 (January-February, 1962), p. 59.

Rogers, C. R. and Skinner, B. F. "Some Issues Concerning the Control of Human Behavior: A Symposium," *Science*, 124 (November 30, 1956), pp. 1057-66.

Rothkopf, Ernest Z. "Automated Teaching Devices and a Comparison of Two Variations of the Method of Adjusted Learning," *Psychological Reports* (February, 1961), pp. 163-69.

"A Deduction from an Excitation-Inhibition Account of Retroactive Inhibition," *Journal of Experimental Psychology*, 53 (March, 1957), pp. 207-13.

Schutz, R. E. "Progress and Preparation of Automated Instructional Material and Criterion Measures," *Automated Teaching Bulletin*, 1 (December, 1959), pp. 31-33 (see Rheem Califone Corp.). Also presented at Symposium on Automated Teaching, Western Psych. Assoc. Convention. San Diego, California (April, 1959).

Schultz, Richard E.; Baker, Robert L.; and Gerlach, Vernon S. "Teaching Capitalization With a Programed Text," *AV Comm. Rev.*, 10 (November-December, 1962), pp. 359-63.

"Sees Teaching Machines Big Aid in Education," *Columbus Evening Dispatch*, Nov. 11, 1960, p. 13.

Silberman, R. F. and Coulson, J. "A Draft Summary of Findings in an Exploratory Teaching Machine Study," *Automated Teaching Bulletin*, 1 (December, 1959), pp. 35-37.

Silvern, Leonard C. "An Analysis of the Teaching Machine Field and Implications for Home Study Courses," *Home Study Review*, Winter, 1961. Also, Education and Training Consultants Co., (Code #5.1.1).

and Levine, S. L. "The Evolution and Revolution of the Teaching Machine," *Journal of the American Society of Training Directors* (December, 1960 and January, 1961). Also Education and Training Consultants Co.,

"Programmed Instruction and Computer-Assisted Instruction . . . An Overview," (with G. M. Silvern), *Proceedings*, Inst. Electrical and Electronics Engineers, Computer Issue, December, 1966.

"Shaping and Controlling Human Behavior in Man-Machine Systems," *Proceeding*, Industrial Admin. and Engineering Product Group, Vol. 177, No. 34, 1963.

"Teaching Machine Technology: The State of the Art," *AV Comm. Rev.*, 10 (May-June, 1962), pp. 204-17.

"Uniformity in Teaching Machine Technology," *AID*, May, 1961.

Skinner, Burrhus Frederic. "The Experimental Analysis of Behavior," *American Scientist*, 45 (September, 1957), pp. 343-71.

"Inside Opinion," *CPI Bulletin*, 1 (May, 1961), p. 1.

"New Methods and New Aims in Teaching," *New Scientist*, May 21, 1964.

"Reinforcement Today," *American Psychologist*, 13 (March, 1958), pp. 94-99.

"The Science of Learning and the Art of Teaching," *Harvard Educational Review*, 24, 1954, pp. 86-97.

"Teaching Machines," *Science*, 128 (October 24, 1958), pp. 969-77.

"Teaching Machines," *Scientific American*, November, 1961.

"Why We Need Teaching Machines," *Harvard Eductaional Review*, 31 (Fall, 1962).

Spence, K. W. "The Relation of Learning Theory to the Technology of Education," *Harvard Educational Review*, 29 (Spring, 1959), pp. 84-95.

Sturwold, Virginia G. "Sources of Self Instructional Devices," *Audiovisual Instruction*, 6 (April, 1961).

Suppes, Patrick. "Plug-In Instruction," ("The Computerized Age"), *Saturday Review*, July 23, 1966, pp. 25-30.

Taris, C. M. "Automatic 'Answer Only' Set," *Bell Laboratory Record*, 34 (May, 1956), pp. 165-68.

Terrace, H. S. "Discrimination Learning With and Without 'Errors,'" *J. exp. Anal. Behavior*, 6, 1963, pp. 1-27 (a).

"Errorless Transfer of a Discrimination Across Two Continua," *J. exp. Anal. Behavior*, 6, 1963, pp. 223-232 (b).

Twyford, L. C. "Profile Techniques for Program Analysis," *AV Comm. Rev.*, 2 (Fall, 1954), pp. 243-61.

Watson, Goodwin. "What Do We Know About Learning?" *NEA Journal*, 52 (March, 1963).

Wechkin, Stanley. "Word Learning In an Automated Teaching Situation as a Function of Display Condition," *Journal of Educational Psychology*, 53 (August, 1962), pp. 165-69.
AV Comm. Rev., 10 (November-December, 1962), p. 357.

BEST COPY

Wedeen, S. U. "Mechanical Versus Non Mechanical Reading Techniques for College Freshmen," School and Society, 79 (April 17, 1954) pp. 121-23.

Williams, Joanna P. "Comparison of Several Response Modes in a Review Program," *Journal of Educational Psychology*, 54 (October, 1963), pp. 253-60.

Wilson, J. A. R. and Robeck, Mildred C. "Teaching Machines and Spelling *AV Comm. Rev.*, 9 (November-December, 1961), pp. 298-300.

Wiseman, S. "The Tools of Research — Men and Machines," *British Journal of Education and Psychology*, 1962, p. 218.

Xhignesse, Louis V. "Explaining Teaching Machines and Programming" (David Cram), a book review, *AV Comm. Rev.*, 10 (March-April, 1962), pp. 112-13.

II. *Programed Materials in Music:*

A. *Books:*

Andrews, J. Austin. "Development and Trial of a Basic Course in Music Theory Using Self-Instructional Materials to Supplement Training Recevied in High School," HEW Project #5-0261.

______ and Wardian, Jeanne Foster. *Introduction to Music Fundamentals.* New York: Appleton-Century Crofts, 1964.

Ashford, Theodore Harold Askounes. "An Investigation of Programmed Instruction, in the Fundamentals of Music Theory," Unpublished Ph.D. Dissertation, Northwestern University, Evanston, Ill.; June, 1965, Order #65-12,043.

Barnes, R. A. "An Analysis of the Effectiveness of Programed Instruction as an Ancillary Learning Experience in a Music Fundamentals Class for Prospective Teachers," 1963, Ohio State U., unpublished doctoral dissertation, Order #64-541; Appendix A, pp. 100-383 published by McGraw-Hill Bk. Co., Inc., see next reference.

______. *Fundamentals of Music*: A Program for Self-Instruction. New York: McGraw-Hill Book Co., 1964.

Basic Materials in Music, Learning Inc.; Tempe, Arizona.

Batcheller, John. *Musical Notation* (and Work Sheets Book). Wilmette, Ill.: Encyclopedia Britannica Press, 1964.

______ and DuBois, Betty Lou. *Reading Music.* Albuquerque, N.M.: General Programed Teaching Corporation, 1962.

Bigham, William Marvin, Jr. "A Comparison of Two Response Modes in Learning Woodwind Fingerings by Programmed Text," unpublished Ph.D. dissertation, Florida State University, 1965, Order #65-13,445.

Carlsen, James C. "An Investigation of Programmed Learning in Melodic Dictation by Means of a Teaching Machine Using a Branching Technique of Programming," unpublished Ph.D. dissertation, Northwestern University, Evanston, Ill., 1962.

______. *Melodic Perception*: A Program for Self-Instruction. New York: McGraw-Hill Book Co., 1965 (Programed text and five reels of tape).

______. "Programmed Learning in Melodic Dictation," unpublished Ph.D. dissertation, Northwestern University, 1962. U. Microfilms, #63-1274.

______. "The Role of Programmed Instruction in the Development of Musical Skills," Report of Seminar in *Comprehensive Musicianship*. Washington, D.C.: Contemporary Music Project, MENC, Fall, 1965.

Chakerian, Lan and Ventolo, William. *Fundamentals of Music.* Albuquerque, N.M.: Teaching Machines, Inc., 1961. Programmed textbook and machine format (700 frames). Division of TMI-Grolier.

Clough, John *et al.* "Oberlin Teaching Machine Project 1959-60," Report submitted to Ford Foundation, February, 1961.

Clough, John. *Scales, Intervals, Keys, and Triads*: A Self-Instruction Program. New York: W. W. Norton and Co., 1964.

Comprehensive Musicianship: The Foundation for College Education in Music (article by Carlsen cited above). Report of the Seminar sponsored by the Contemporary Music Project at Northwestern University, April, 1965, Washington, D.C.: Contemporary Music Project, MENC, 1965.

Dallin, Leon. *Introduction to Music Reading: A Program for Personal Instruction.* Glenview, Ill.: Scott, Foresman and Co., 1966.

Daniels, M. L. "Programmed Learning in Harmonic Dictation," unpublished Ed.D. dissertation, School of Education, North Texas State University, 1964.

Fundamentals of Music. AVTA Corp., Los Angeles, California.

Fundamentals of Music: Self Tutoring Course. New York: TMI-Grolier, 1960.

General Programmed Teaching Corp. *Elementary Music Reading* (Grades 3-6). Albuquerque, N.M.: 1962.

Harder, Paul. *Basic Materials in Music Theory.* A Programmed Course. Boston: Allyn and Bacon, Inc., 1965.

Homme, Lloyd E. and Tosti, Donald T. *Fundamentals of Music.* Davenport: Mast Teaching. (Machine Program available from TMI-Grolier).

______ and ______. *Fundamentals of Music.* Teaching Materials Corporation, 1960, also available for use in MIN MAX II machine.

VAILABLE

Howard, Bertrand. *Fundamentals of Music Theory: A Program.* New York: Harcourt, Brace and World, Inc., 1966.

Kanable, Betty M. "An Experimental Study Comparing Programmed Instruction with Classroom Teaching of Sight Singing," unpublished Ph.D. dissertation, Northwestern University, Evanston, Ill., 1964, Order #65-3280.

Kraft, Leo. "First Year Ear Training Program." Queens College, unpublished.

Kraus, Egon (ed.). *International Listing of Teaching Aids in Music Education.* Cologne, Germany: International Society for Music Education, 1959.

Lefkoff, Gerald and Horacek, Leo. "Self-Instruction Theory Program." West Virginia University. (Unpublished).

Leonard, Charles. "New Concepts in Learning Theory as They Apply to Music Education." Paper presented at a symposium, Current Issues in Music Education, The Ohio State University, February, 1963.

Lewis [Barton], June. "Pilot Study in Programmed Learning," Washington University, St. Louis, Mo., unpublished.

Maltzman, Edward. "An Investigation of Key-Tone Matching with Children and Adults," *Dissertation Abstract,* Boston University, 1964.

"National Conference on New Uses of Educational Media in Music," "HEW Project #OE-4-16-021.

Mandle, William Dee. "A Comparative Study of Programmed and Traditional Techniques for Teaching Music Reading in the Upper Elementary Schools." HEW Project #6-8184.

Music: Counterpoint and Harmony. New York: TOR Education Inc.

Music Makers (Grade 3). Scottsdale, Arizona: Learning Incorporated, 1963. (Mimeographed).

Nelson, Carl. "The Effectiveness of the Use of the Adjunct Programmed Analysis of Musical Works on Students' Perception of Form." HEW Project #5-1084.

Reese, Virginia Denyer. "An Analysis of Musical Forms: A Programed College Text," unpublished Ph.D. dissertation, University of Oklahoma, 1964. University Microfilms, Ann Arbor, Michigan.

Schwartz, Paul. *Hearing Music with Understanding.* Developed as part of the Great Lakes College Association Programed Instruction project. Chicago: Educational Methods, Inc. Records and workbook.

"Musical Score Reading." Kenyon College. (Great Lakes College Association Programed Instruction Project). (Unpublished).

Sherburn, Merrell. "A Course in Musical Dictation: The Development of a Library of Theory Practice Tapes, paper presented at MENC 19th Biennial Meeting, Philadelphia, March 16, 1964.

Sidnell, Robert. "The Development of Self-Instructional Drill Materials to Facilitate the Growth of Score Reading Skills of Student Conductors." HEW Project #5-1083.

Smith, Lawrence R., Hammar, Russell A., and Ray, Harry B. "Programmed Instruction Project in Ear Training," (dittoed program). Kalamazoo: Kalamazoo College, n.d.

Spohn, Charles L. "A Comparison Between Different Stimuli Combined with Two Methods for Providing Immediate Knowledge of Results in Learning the Elemental Materials of Music." HEW Project #5-0840.

"A Comparison Between Different Stimuli Combined with Two Methods for Providing Knowledge of Results in Music Instruction." Title VII Project #1088. Grant #7-45-0430.214, Ohio State University Research Foundation.

"A Diagnostic Testing Program with Appropriate Auto-Instructional Treatments to Meet Individual Differences in Learning." HEW Project #5-0262.

"An Exploration in the Use of Recorded Teaching Material to Develop Aural Comprehension in College Music Classes," unpublished Ph.D. dissertation, Department of Education, Ohio State University, 1959. Abstract in *JRME,* Fall, 1963. LC Card # Mic 59-5941.

and Poland, W. "An Evaluation of Two Methods Using Magnetic Tape Recordings of Programed Instruction in the Elemental Materials of Music," 1964. Final Report RF1407 under U.S. Office of Education Grant #7-45-0430-1720, Ohio State University Research Foundation.

"Interval Training." Ohio State University. (Unpublished).

Spohn, Charles L. and Poland, B. William. *Sounds of Music,* three volumes (I. Ascending Intervals, II. Descending Intervals, III. Harmonic Intervals). Supplementary record available for each volume. New Jersey: Prentice-Hall, 1967.

"A Study to Evaluate Two Methods Using Magnetic Tape Recording for the Self-Instructional Presentation of the Elementary Materials of Music," Grant #7-34-0430-172, a progress report submitted to Department of HEW. Ohio State University Research Foundation, July 26, 1963. Project #876.

Varty, Jonathan W. Progress report to the Educational Research Association of New York State, Albany, New York, November 14, 1966.

Wardian, Jeanne Foster. *The Language of Music: A Programmed Course.*

BEST COPY A

New York: Appleton-Century-Crofts, 1967. Includes integral recordings.

Waves of Music. INADCON Limited (London).

Wilcox, James. "Programmed Fundamentals of Music Theory." Southeastern Louisiana College. (Unpublished).

Woelflin, Leslie. *Classroom Melody Instruments*: A Programed Text. Scott, Foresman and Co., 1967.

B. *Articles, Periodicals, etc.*:

Ashford, Theodore H. A. "The Use of Programed Instruction to Teach Fundamental Concepts in Music Theory," *JRME*, XIV (Fall, 1966), pp. 171-77.

Barnes, Robert A. "Programed Instruction in Music Fundamentals for Future Elementary Teachers," *JRME* (Fall, 1964), XII, pp. 187-98.

Carlsen, James C. "Implications of Recent Research Problems in Programed Music Instruction," *Council for Research in Music Education* Bulletin 4, 1965, pp. 30-35.

. "Programmed Instruction, a new tool for the music educator," *International Music Educator* (ISME Journal) (March, 1966), pp. 426-31.

. "Programmed Learning in Melodic Dictation," *JRME* (Summer, 1964), pp. 139ff.

Conference on Educational Media in Music Education. *Music Educators Journal* (November-December, 1964), p. 40. A short outline of a coming program.

Cribb, G. R. "The Comparative Effectiveness of Conventional and Programed Instructional Procedures in Teaching Fundamentals of Music," *Dissertation Abstracts*, 25:7098, 1965.

Dallin, Leon. "A Survey of Programed Music Teaching Materials," *Music Educators Journal* (February-March, 1960), pp. 198-200.

Ellington, Donald. "Automated Teaching System for Functional Piano Skills," *Missouri Journal of Research in Music Education*, 1, 1966, pp. 7-13.

Fischer, Bernard. "Programmed Learning in Strings," *The American Music Teacher* (March-April, 1963), p. 20 (and later articles).

Fox, Fred. Review of Clough's text, *JRME* (Summer, 1964), p. 183.

Goldiamond, Israel and Pliskoff, Stanley. "Music Education and the Rationale Underlying Programmed Instruction," *Music Educators Journal* (February-March, 1965), pp. 43-47, 190-95.

Hammer, Hary. "An Experimental Study of the Use of the Tachistoscope in the Teaching of Melodic Sight Singing," *JRME*, XI (Spring, 1963), pp. 44-55.

Hargiss, Genevieve. "The Development and Evaluation of Self-Instructional Materials in Basic Music Theory for Elementary Teachers," *Council for Research in Music Education* Bulletin 4 (Winter, 1965), pp. 1-5. HEW Project #5-0210.

Ihrke, Walter R. "Automated Music Training," *Council for Research in Music Education* Bulletin 2 (Winter, 1964), pp. 6-8.

. "Automated Music Training," *JRME* (Spring, 1963).

. "Trends in Music Education Research," *Council for Research in Music Education* Bulletin 2, 1964, pp. 29-31.

Johnson, Barry Wayne. "Programmed Instruction in Music," *Instrumentalist* 20 (February, 1966), pp. 26-32.
Emphasizes usefulness of programed material for high school orchestra, band, and choral directors who don't have time to teach theory in class.

Kraft, Leo. Review of Carlsen's *Melodic Perception*, JRME (Fall, 1965), pp. 187-88.

LeBach, Parker. "A Device to Facilitate Learning of Basic Music Skills," *Council for Research in Music Education* Bulletin 4 (Winter, 1965), HEW Project #5-8284.

Lewis, Philip. "Teaching Machines Have the Beat," *Music Educators Journal* (November-December, 1962), pp. 94-98.

I'elson, Carl B. "The Effectiveness of the Use of Adjunct Programed Analyses of Musical Works on Student's Perception of Form," *Council for Research in Music Education*, Bulletin No. 9, Spring, 1967.

Programed Instruction (Teachers College). Vol. IV (June, 1962) includes Edward Maltzman's "Research on 'Analysis of Musical Behavior' — A Progress Report."

Schwartz, Elliot. Book reviews of Clough and Barnes, *Journal of Music Theory*, 8 (Winter, 1964).

Sherburn, Merrell L. "Music in the Language Laboratory," *Music Educators Journal* (January, 1964), pp. 109-10.

Sherman, Robert W. "Aural and Visual Perception of Melody Presented in Tonal and Atonal Environments," *Council for Research in Music Education* Bulletin 4 (Winter, 1965). HEW Project #5-0214.

Shetler, Donald J. "Some Problems in the Evaluation of New Teaching Media," *Council for Research in Music Education* Bulletin 2 (Winter, 1964).

Spohn, Charles L. "Music Instruction in the Language Laboratory," *Theory into Practice*, 1 (February, 1962).

. "Programming the Basic Materials of Music for Self-Instruc-

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tional Development of Aural Skills," *JRME* (Fall, 1963), XI, pp. 91-93.

"The Use of Self-Instructional Materials to Teach the Basic Materials of Music," *JRME*, 1962.

Thomas, Ronald B. "A Study of New Concepts, Procedures, and Achievements in Music Learning as Developed in Selected Music Education Programs," *Council for Research in Music Education* Bulletin 6 (Fall, 1965).

Trythall, Gilbert. "Ear Training and Programmed Instruction." (Unpublished Paper).

"Observations on Music Dictation Programming," School of Music, George Peabody College, Nashville, Tennessee. (Unpublished paper).

Weisgerber, Robert A. and Rasmussen, Warren I. "Eighty Ears a Teacher," *Music Educators Journal*, 52, 1965, pp. 79-84, 118-121.
Deals with a fourth grade project involving tapes and responses.

Werder, Richard. Programed Instruction in Music Education," *Musart* (September-October, 1966).

Woelflin, Leslie E. "Teaching Clarinet Fingerings with Teaching Machines," *JRME*, XII (Winter, 1964), pp. 287-94.

III. *Miscellaneous Materials*

A. *Programed Material*:

Teaching Machines and Programmed Learning, 16-mm film. Department of Audiovisual Instruction, NEA, Washington, D.C., 1961.

Trythall, Gilbert. Multi-tape project at George Peabody College, Nashville, Tenn.

B. *Non-programed Material*: (while these do not relate directly to programed instruction, they are of value and should be noted):

Barbour, J. Murray and Kuttner, Fritz A. Three records: *Theory of Classical Greek Music*, 1955; *Mean Tone Temperatment in Theory and Practice*, 1958; *Theory and Practice of Just Intonation*, 1958. Musurgia Records.

Ellsworth, A. Eugene. *Exercises in Harmonic Listening*. A. Eugene Ellsworth, 1966.

Nelhybel, Vaclav. *Twelve-Tone Composition*. Folkways Records.

Recordings for Practical Beginning Theory (prepared by Bruce Benward and Barbara Garvey Seagrave of the University of Arkansas, Fayetteville, Arkansas). William C. Brown Company Publishers.

Rutgers University Music Dictation Series (Course in Basic Musicianship and Ear Training, 10 records). Music Minus One.

Science of Sound. Folkways Records.

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FACTORS INFLUENCING THE CHOICE AND PURSUANCE OF A CAREER IN MUSIC EDUCATION: A SURVEY AND CASE STUDY APPROACH[1]

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Reviewed by Alex H. Zimmerman
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This study investigated the interactions that influenced the choice and pursuance of music education as a vocation. Eighty Southwest Missouri State College music education graduates, the total of 1960-64 graduating classes, were sent questionnaires soliciting information about family, school, and musical backgrounds. From the respondents (100%), ten, a representative boy and girl from each year, were selected by the music faculty for intensive case study. These were selected to be "representative" of the graduates — not the most successful, necessarily.

Tape-recorded interviews with each of the ten were made and transcribed. Also interviewed were parents, school administrators, ministers, siblings, friends, and others. Although conclusions from such investigation are definitive only for the ten cases, a comparison of their questionnaire responses with the other seventy revealed no significance difference.

Two attempts were made to find typical patterns of personality. First, the Edwards Personal Preference Schedule (EPPS) was administered; second, each transcription was analyzed by a counselor and a counseling psychologist. The great amount of peripheral information was searched for possible relationship to career selection and success.

The following findings are reported:

The EPPS showed only normal personality traits to exist, with deviations from "average" understandable in the light of the case study material and in agreement with reports from school administrators and teachers.

The high school years, especially the senior year, were crucial in vocational decision. Musical performance, peer recognition, and personal satisfaction significantly influenced the choice. High school and private music teachers were the most influential persons. Vocational testing, counseling, and guidance were either completely lacking or inadequately used.

On the basis of their present knowledge and experience, most of the subjects rated grade school music poor, lacking in rudiments, appreciation, and opportunities for group participation. High school and college training was rated good because of increased opportunities for group and contest participation, with resultant increased interest and motivation. Although administrators felt these young teachers had been adequately prepared, most rated their practice teaching poor, lacking in intensity and reality. Academic success and subsequent teaching success showed no marked correlation.

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[1] Unpublished doctoral dissertation.

This study seemed to depict the "typical" music educator as having had the following background and experiences: 1) most homes had a piano, radio and phonograph; 2) more parents were unmusical than musical; 3) the mother was the dominant parent; 4) poor musical backgrounds in the school seemed to promote a drive within the subjects to become better teachers; 5) feeling of inferiority prevailed among the subjects concerning their current teaching and knowledge of music; and 6) most of the subjects had problems in disciplining their students.

After becoming teachers and meeting the problems faced by the profession, they found that classroom discipline and motivation of students were greater problems than they had anticipated. Although the college provided little or no in-service assistance after graduation, administrators and colleagues did give effective help. They found their older colleagues more conscientious and better trained than they had previously thought. Most felt satisfied and justified in their career choice.

Certain weaknesses in the music curriculum are implied in these findings: 1) a need for better vocational testing and counseling and greater recognition of the influence of private and school music teachers in career selections; 2) a need for more in-service assistance from the colleges, such as clinics and seminars; 3) a need for more meaningful practice-teaching, including more intensity and diversity of experiences; 4) a need for more communicative arts in college; 5) a need for more training in discipline and classroom procedures; and 6) a need for re-evaluation of the effects of music contests, on both teachers and students.

Comments

While the true worth of a questionnaire research study is often doubted, the strength of this study lies in the personal histories of ten of the respondents and the relationship of these case studies to the validity of the findings in the questionnaire responses of the others.

While the researcher set out to point up the factors that influenced a music education career (which he does effectively) it seems to this reviewer that the true worth of the study lies in the implications for teacher preparation. The report of case studies themselves would be very beneficial as collateral reading for students who are preparing to teach. Indeed, a collection of these and similar personal case histories from many and varied sections of the country would make a prized publication which would create in the minds of the students the need for and the techniques of self-evaluation. It points up further the desirability of some background studies in mental hygiene and other psychological-oriented studies for students regardless of choice of profession.

While the glamor of high school performing groups and the desire of students to be "like their high school music teacher" and eventually to direct a similar "glamor" group seems to lead many students to music education, the facts are plainly evident that good counseling and vocational testing would change the course of many prospective teachers and point up background needs which reach far beyond the "glamor" of high school music.

The respondents who were the most successful as teachers were those who had advantage of private instruction in grade and high school. "Private lessons" was listed as the most important experience in grade school by the largest percentage of respondents (21.3%—p. 35). This seems to point to the need of closing the chasm which too often exists between the school and private music teacher. The complete training of the child musically is a cooperative effort of both the school and private teacher, and those of us in public education need to do all we can to strengthen the relationship of all teachers in this regard.

Special Implications for Teacher Training

This study seems to point toward the need for the training of music teachers to be broader. (And with a curriculum already overcrowded, this has implications for a five-year program which is already established in some states). There seems to be too much "instrumental" or too much "vocal" rather than "instrumental-vocal" in the training program in relation to the situation (sometimes frustrating) in which the young students find themselves. Of the 28 teachers in the study who were teaching both vocal and instrumental music, only nine (9) had been prepared for both instrumental and vocal. The majority or respondents (55%) were teaching grade school music either exclusively or as a part of their teaching assignment. While the study did not specifically go into the training for elementary music teaching, the elementary programs from which the 80 respondents came were rated as "poor". One cannot help but wonder how many elementary programs in the country are taught by frustrated teachers who prepared to be high school teachers but for whom there were no positions. The large number of college girls who major in clarinet, for example, (often to satisfy the instrumentation needs of the college band) have a limited field of teaching secondary instrumental music. A study into what happens to these girls would be rewarding. Are they the people who became grade school general music teachers despite a lack of preparation, pedegogically and psychologically, and who eventually make the high school music teacher say "I wish they would teach these kids something in the elementary school?"

It seems to this reviewer, also, that the need for better functional keyboard experience would be a boon to teachers. The more insecure teachers in the case studies seemed insecure also in basic piano for the classroom. "Most of the subjects felt that majoring in piano or organ would enable them better to teach either vocal or instrumental music in the schools." (p. 207) Basic piano for the prospective music teacher who is not a piano major is quite deficient in American teacher training institutions.[2] Sight reading, playing simple chordal accompaniments to school songs, and playing parts of open octavo vocal scores are skills essential to music teaching which are not acquired by playing "pieces." The implications for applied music teachers charged with training the music educator are obvious.

A thorough investigation of student teaching for music majors seems to be indicated in the study. Despite the "apologies" in the study that student teaching was done in a laboratory school and that the situation is now different on the campus of the institution involved, similar conditions exist in many schools across the country. The key to good student teaching revolves around a good cooperating teacher. Unfortunately, the study did not attempt to delve specifically into the assistance rendered by the cooperating teacher. However, such passages as the following from one of the case studies (p. 98) gives some insight into conditions:

> Mr. T. did not feel that his student teaching was in anyway "typical" of an actual teaching situation. He taught kindergarten and first grade vocal music, and he shared these experiences with four other practice teachers. One day each week they took turns directing instrumental reehearsals or teaching beginners. The supervising teacher was present a little more than half the time, but he had no conferences with the practice teachers. All of the student-teachers were required to turn in lesson plans, but no comment was made about them other than that they were fine. The supervisor never spoke to him about personality problems, teaching approaches, or methods, and he never offered any comments about his teaching. Mr. T. did not feel that this was a valid form of supervised teaching . . . His college training motivated him to go out and teach, but his practice teaching discouraged him.

Nor did the study indicate what kind and number of observations of the student were made. Was the observation by a member of the music faculty whose experience included public school teaching or was the sole observation by a member of the education faculty? There are certain aspects of music teaching which indicate that at least some of the observation and clinical comments should be made by someone on the music faculty. Typical of most laboratory schools as the one in the study, music seems to be an extracurricular activity usually with classes meeting before or after school — a situation quite different from the comprehensive American school.

A large majority of the respondents had difficulty with discipline. And music teaching involves some special discipline "pitfalls." Someone has said that a student in an instrumental class or organization has a "weapon in his hand." This weapon can be used effectively to irritate the teacher and disturb the class. Some provision should be made to present discipline correction techniques that are unique to music classes before students enter a teaching situation. Whether or not this advantage was given to the students in this study is not indicated, but at the expense of indulging in he dangerous business of generalizing, this reviewer is of the opinion (from observation) that most music method classes are weak in this regard.

It goes without saying that institutions of higher learning should incorporate plans for follow-up conferences with graduates. More and more this is becoming one of the prime functions of the modern college and university. In some fields — medicine, science, mathematics, etc. — higher education performs this function well, and as Dr. Burgstahler points out, music departments should have a continuing interest in the development of former students.

In this connection, also, the undergraduate training of music teachers should include a thorough indoctrination of future teachers to the splendid opportunities provided by the professional organization of teachers for clinics, conferences, and workshops on the regional, state, divisional, and national level. As a profession, music education excells in the number and opportunities of these.

Dr. Burgstahler indicates rightly, also, that music educators should undertake to "present to students a realistic view of the standards of performance skill required for effective teaching; . . . increased attention to instructional skills, as distinguished from performance skills, and increase the attention to developing critical skills (accurate evaluation of another's performance) as distinguished from performance skills (the ability to perform)" (pp. 225-226). Performance for performance sake is undoubtedly one of the downfalls in the training of music teachers. This situation seems to call for a lessening of some of the public performance pressures by inaugurating more laboratory performance in which the students themselves would undertake the teaching and conducting of music selections of the type and in the manner they will need to do as teachers. In fact, this type of situation could well replace the traditional student teaching which may work well for mathematics and English teachers but leaves much to be desired for music teaching.

Finally, one cannot help but notice the emphasis given to performance groups in the geographical section covered by the study and the almost disregard or exclusion of other aspects of a music program that could affect the lives of all of the children. Possibly the real objectives of a school music program were never considered in the formulation of curriculum or in teacher preparation. Changes in curriculum are occurring in all fields. Music educators are not in the vanguard of these changes. Such organizations as the American Council of Learned Societies are very critical of the fact that music in the school touches such a small percentage of the student population and predicts that music will be completely extra-curricular unless changes are forthcoming. This research seems to indicate that we should give more attention to "why" we teach music.

Dr. Burgstahler has made a real contribution in this study and every person involved in teacher training in every aspect could well give it serious consideration.

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2) Buchanan, Gillian, "Skills in Piano Performance in the Preparation of Music Educators." *Journal of Research in Music Education*, Vol. XII, No. 2, Summer 1964, pp. 134-138.

THE DEVELOPMENT AND USE OF THE RENAISSANCE TROMBONE

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There are a large number of delightful and interesting stories about the origin of the trombone but many of them are of dubious authenticity. The book of Daniel (3:5) mentions a "sackbut" (the medieval name for trombone) but it is a mistranslation of the Greek word *sambyke* (Aramaic *sabeca*) which was probably a four-stringed instrument of the harp or lyre class. An early account often related is that of the Spartan Bard Tyrtaeus who supposedly got an idea from playing a trumpet with a tuning slide and invented the trombone in 685 B.C. The invention has also been ascribed, strangely enough, to the mythical Osiris, Egyptian god of the underworld and judge of the dead. The ancient Roman trombone reportedly given to King George III of England cannot be traced. It apparently was one of those large horns or *buccina*[1] which form part of the National Museum at Naples.[2] The "sackbut" of the ninth century said to be illustrated in the famous Boulogne Psalter (M.S. No. 20) is probably akin to the *cithara*[3] and thus is in no way related to the trombone. A number of royal trombonists are mentioned in a document dating from 1257[4] but lack of details leave little to be gained from the reference.

While it is not known exactly when or in what country the instrument first appeared, the ascription most likely belongs, if not to an oriental country, to Northern Italy or South Germany before or during the fourteenth century.

An effort to unravel the origin of the trombone's name[5] is in itself a difficult task. Not only was there a great deal of variation from one language to another, but there were innumerable and diverse forms and spellings of the word within the same tongue. In Italy it was called *tromba da tirarsi, tromba spezzata, trompone, trombone a tiro* or simply *trombone*. In Germany the title was *buzaun* which came from the long straight *buzine* or *pusine* and later became *posaune*.[6] *Zug-trommet* or *zugposaune* are also German references, while *bazuin schuijftrompette* is a Dutch term. French appelations were *saquebute, saqueboute* (pull-push), *carbouc, trompette harmonique*, or *trompette a coulisse*. The term *sacbut* derived from the Spanish name *sacabuche* which in turn came from *sacar* (to draw) and *bucha* (a pipe). The popular old English name *sackbut* came from this source. *Shakbusshe, sagbut, saykebude, sakbud, shackebutta, shagbolt* and *draucht trumpet* were all used in England and throughout the British Isles.

It cannot be determined just who was responsible for the invention of the slide or where it originated. While it has been insinuated that the idea grew out of the use of a tuning slide, there is little evidence to support the claim. It is obvious, however, that such a device could suggest the type of slide found on the trombone.

Pictorial evidence shows that the early slide trumpets had a kind of sliding mouthpiece "throat" which lengthened and shortened the tubing to provide several chromatic tones.[7] This device is logically an immediate predecessor of the U shaped slide which later appeared on the trombone.

Before 1400 the medieval straight trumpet appeared folded into an S shape. The shorter straight trumpet soon developed into the Clarion and Field Trumpet and the longer *buccine* became the Sackbut or trombone. The earlier form of the S shaped Trumpet[8] had only to receive the addition of a slide and an attachment of metal stays (for greater rigidity) to appear as the first form of the Sackbut.[9] Although the higher slide trumpet was not a very efficient instrument, the draw form of the low trumpet, which developed into the sackbut, seems to have gained favor from the start.

That the slide was already in use by the fourteenth century is evidenced by the occurrence of the words *sacabuche, saquebute* and other forms of the word in the writings of the time. A representation of a slide instrument, together with *shawms*[10], on an ivory chessboard[11] of Burgundian origin adds solid support to this evidence. Galpin claims the instrument to be an early sackbut [12] but the position of the player's hands lends support to the suggestion that it is most likely some kind of a slide trumpet. In an early fifteenth century art piece, however, an "unmistakable trombone, making up a dance band in company with three *shawms*, appears in 'The Wedding of the Adimari', a Florentine chest painting of about 1420."[13]

The slide mechanism itself was an idea which had tremendous possibilities. While the first slides likely produced no more than two or three semitones, it was only a matter of time until the slide was sufficiently lengthened to make the instrument fully chromatic. Appearing thus, it was perhaps the first of all the orchestral instruments to arrive in its present shape. Paintings of the fifteenth century show all the essentials of the modern instrument.

Granting that information about the use of wind instruments in the middle ages is scanty, certain pictorial and literary evidence indicates conclusively that the trombone was among those instruments which were used. It is known to have doubled a voice line or substituted for the singing voice in some of the *cantus firmi* of earlier masses and motets. Similar use in *rondeaux*, *chansons*, and other musical forms is also certain. Gustave Reese, referring to one version of Pierre Fontaine's three-part rondeau, *J'ayme bien celui qui s'en va*, preserved in the Escorial V. III. 24 manuscript, points out the use of a slide instrument. In Reese's words, "there is no question of a part that may possibly call for the instrument . . . ;

the source actually demands one."[14] While the contratenor part of Fontaine's composition is superscribed *trompette*, it covers the rather wide range from D to D' and includes every diatonic note except E and B. "None of the mysterious fifteenth century slide trumpets could have managed this, but it lies perfectly for a trombone in G."[15]

The trombone also served in connection with the activities of the old tower musicians. These players, which originally functioned as watchers at the gates, used their instruments in giving established signals. Eventually they became more sophisticated and musical reaching the point of professionalism. The cities paid them to play at various public performances. "In Bologna no less than sixteen *cornetti*, *tromboni*, and *pifferi*,[16] together with a drummer, played for an hour each evening in front of the town hall or *Palazzo publico*."[17] At a celebration given by the Duke of Burgundy in 1488 one of the musicians present played *une trompette saicqueboute*.[18] A rather interesting use of the trombone occurred when a trombonist posted on the church steeple alternated antiphonally with a group of eight trumpeters and a tympani player posted in front of the city hall.[19]

The profusion of musical instruments used during the fifteenth and sixteenth centuries attained increasing prominence. The courts vied with one another in securing the most skilled players. Members of city bands composed of trombones and trumpets earned for themselves a fine reputation and made their living by playing at frequent civic affairs. Prominent families were also inclined to employ instrumentalists. Coronations, processions, banquets, funerals and similar public and private gatherings saw a use for the trombone in ensemble. It appeared most frequently with *cornetti*,[20] *shawms*, and *krumhorner*.[21]

Marriages were among the most celebrated of occasions of the Renaissance. Purely instrumental performances, along with vocal and mixed ensembles, are frequently mentioned in accounts of wedding banquets. Trombones are named among those instruments providing music at a wedding feast at the court of Ferrara in 1529. At the marriage of Duke William of Bavaria and Reneé of Lorraine, trombones play an important role in the performance of the forty-part *Ecce beatam lucem* by Striggio. The wedding of Cosimo I de'Medici and Eleonora of Toledo saw an interesting performance of Corteccia's ceremonial motet. "This work was sung over the archway of the great door of the Porta al Prato with 24 voices on one side and on the other 4 trombones and 4 *cornetti* on the enrance of the most illustrious Duchess."[22] In Campion's Maske, perormed at Whitehall on Twelve Night, 1607, at the marriage of Sir James Hay, a "doublesackbote" (bass trombone) was used.

The trombone was perhaps the most popular wind instrument of the sixteenth century. King Henry VII was fond of instrumental music and it is known that trombones were a part of his ensemble.

Henry VIII, liking them no less, increased the number of trombones to ten.

In reference to the frequent use of trombones and slide trumpets in the sixteenth century, Curt Sachs quotes from Agricola's *Musica instrumentalis deudsch* of 1528:

> Ettiche aber halen der locher keyns
> Nur allein aben vnd unden eyhs
> Auff diesen wird die melodey / allein
> Durchs blasen vnd ziehen gefuret rein
> Als sein Busaun / Trumpeten vnd Claret

Translated as:

> Some have no holes at all, I trow,
> Save one on top and one below:
> Claretas, trumpets, and trombones
> By breath and sliding yield their tones[23]

Almost every composer of the time used trombones in one way or another. A composer named Kruger published a volume of chorales in 1558 for four and six trombones to be played with the organ. Alexander Orologio's twenty-eight entradas published in 1557 are also intended for trombones together with *cornetti*. Similar works by other composers are to be found in abundance.

In Italy, creators of opera were using trombones. Two of the earliest, Striggio and Corteccia, provided music for *intermedi* by Giovanni Battista Cini. This was given between the acts of d'Ambra's *La Cofanaria*, performed at the marriage of Francesco de'Medici and Johann of Austria in 1565. In France, a performance in 1581 of Balthasarini's *Ballet Comique de la Reine* included the use of trombones. Monteverdi's *L'Orfeo* (1607) employed five trombones — two altos, two tenors, and a bass.

It should be made clear that the trombone, as well as other instruments of the time, was used not only for secular music and gala festivities but that it was also used in the performance of liturgical music for the worship service. They were used both for accompaniment of voices and in independent ensemble playing. The complaints which were raised leading up to the Council of Trent are indicative of how much instruments were being used in the Church. As early as 1500 there was a performance of two masses which were accompanied by an organ, three trombones, a *cornetto*, and four *krumhorner*. Throughout the sixteenth century the trombone was used in consorts where a choir, *cornetti* and sackbuts were used during Mass celebrated by a bishop (1590).

Apparently the demand for greater numbers of musicains in the Church brought about the need for certain restrictions. Denis

Arnold, referring to the musicians employed in the cappella at the Basilica of St. Anthony in Padua (1594), quotes Tebaldini:

> . . . the body of musicians in ordinary should not exceed 16 voices, 4 for each part, and to the bass soprano a cornett . . . and the musicians extraordinary should not exceed 5, i.e., 4 trombones and a violin; and when there are sufficient sopranos, the afore mentioned cornett will be added to the musicians extraordinary, thus making 6 and no more.[24]

While the earliest evidence of the trombone is found in widely scattered literary references and certain pictorial representations, genuine trombones surviving from the second half of the 16th century can be observed and examined even today. These provide, in addition to visual appraisal and specific physical measurements, a tangible tonal evaluation, in that some can still be played.

The sackbut made by Jorg Neuschel, dated 1557, is the oldest known sackbut in existence.[25] Formerly in the collection of F. W. Galpin, it is now in the possession of Anthony Baines. Collections in Verona, Hamburg, and Amsterdam all contain trombones. Some of the earliest ones are dated 1579, 1587, and 1593.

Hans Neuschel of Nurnberg is the first known maker of trombones. He was an exceptionally skilled craftsman whose work earned for him a wide reputation. He received quite a large number of orders for instruments to be made for royal courts. In 1542 he received a request from Duke Albrecht of Prussia for a silver trombone with four slides (double slides). "For Pope Leo X he made some silver trombones, and visited Rome, where his playing was greatly admired and duly rewarded."[26]

Neuschel's business letters (still extant) indicate that he was very well paid for his services. In one dated 1545 he says that he will make five large Trombones and a "Mittel Busone" (a smaller instrument) for £60. For similar sets the King of England, the King of Poland and others always gave him twice that amount.[27]

Like the trumpets of the same period, the trombones were made of hammered brass. They were bent into the appropriate shapes and several braces were then added to give the instrument strength and rigidity. Short overlapping sleeves held the various pieces together. Even though the mechanism of these early trombones was very simple, the makers and players of the sixteenth and seventeenth centuries guarded their secrets very carefully.

Very important to the trombone of the sixteenth century were its crookings which were inserted between the slide and the bell joint. In this manner various lengths of tubing could be employed, making it possible to adjust the pitch to suit the occasion. It was common practice to add enough tubing to change the pitch by as much as a fourth or fifth, a habit which obviously would affect the normal playing register considerably; thus a tenor trombone could add a crook lowering its pitch to the extent that it could play the bass parts. The Colbert trombone shown in PLATE V strangely enough has a crook, although it is already a bass. An interesting feature of the early trombones is that they could be completely dismantled. All the tubes and U bends could be separated. Figure 1, from Mersenne's *Harmonie Universelle,* shows how the instrument was disassembled. The following explanation is offered:

> But all of its arms come apart since the first arm BF, the second FD, and the winding part GH separate at their joints F, G, and H, as well as the mouthpiece A, which is imbedded in the arm at the point B. Similarly the three bands C, E, and M are easily dismantled, so that the workmen make them more easily, and they are more portable. But principally two things must be noted in this instrument, that is, that one rarely used the winding part, which begins at the joint L and ends at the joint G, so that the part of the arm NC, that is to say the bell, is customarily fitted into the joint G so as to bring the sackbut back to its natural tone.[28]

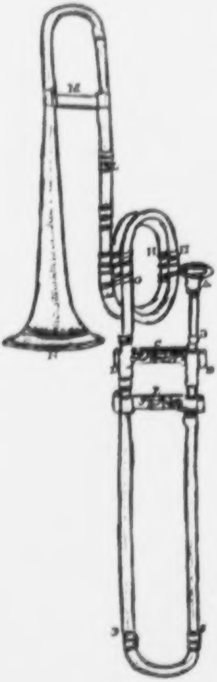

Figure 1. From Mersenne's *Harmonie Universelle, The Books on Instruments,* Trans. Roger E. Chapman. The Hague: Martinus Nijhoff, 1957.

A popular notion about old trombones is that they were constructed of heavier, thicker gauge tubing which would likely result in darker timbres. This was often, but not always the case. A seventeenth-century tenor trombone[29] in the Stearns collection at the University of Michigan in Ann Arbor is such an exception, having almost paper-thin tubing walls. The bells of the old instruments, which were ornate (and consequently heavy), were of a funnel-like shape throughout and were smaller and much less flaring than those of the trombones today. The old trombones generally contained more cylindrical tubing than modern instruments and the bore size of the tubing was smaller.

Figure 2 draws a comparison between old and modern mouthpiece profiles. The typical mouthpiece on the early trombone was funnel-shaped, somewhat like the old type French horn mouthpiece. It was about .7 of an inch deep with a fairly sharp throat and about an inch across the top of the cup.[30] "When attached to the trombone this type of mouthpiece subdues the sonority, but brings out other qualities of tone which cannot be achieved by the ordinary type: the tone becomes richer and comes out without effort."[31]

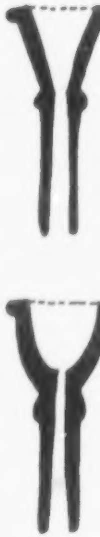

Figure 2.

There are a number of literary references to "hault" and "bas" (high and low) instruments. These designations do not refer to pitch, but rather to loud and soft instruments. That the trombone was often classified with the latter group is apparent. Its sound was softer and therefore more appropriate for use in small ensembles together with recorders or stringed instruments. Mersenne[32] makes it clear that the instrument was not to be sounded in imitation of the trumpet, but that it should approach the softness of voices. Nevertheless the trombone was not limited to intimate chamber work and was used constantly in processions and outdoor concerts with *shawms* and *krumhorner*.

All during the Renaissance the music was arranged for the instruments by the musician in charge rather than by the composer. This makes it more difficult to point to actual compositions in which trombones specifically took part, although they were constantly required to participate. It would be a great mistake, however, for anyone to believe that the practice of instrumentation was haphazard. Such factors as the [illegible] the music, the sonorities and capabilities of the instruments and the acoustics were all considerations which were taken into account. In outdoor performances even the weather was a consideration. "In 1569 Francois Robillard of Paris, 'master player of instruments', contracted with a group of hatters (*chappliers*) to provide ten musicians for their festivities on the feast of St. Michael; they would play six *aubades* on cornetts (*cornetz a bousquin*) and violins if it did not rain, or on flutes (*fleutes d'alemens*) and trombone (*saqueboutte*) if it did"[33]

It was very late in the sixteenth century before composers specified particular instruments for the various parts. In earlier times a player executed any part within the scope of his instrument, without hesitating to double or substitute for a singing voice. Giovanni Gabrieli was one of the first composers to assign different parts to specific instruments. The composer's *Sonata pian'e forte* (1597) calls for two instrumental choirs, one consisting of a cornet and three trombones, the other of a group of stringed instruments called violino. This is the earliest ensemble work to have indications of dynamic levels, as suggested by its name. Another of Gabrieli's compositions require twelve trombones, which play every part from alto downwards in three juxtaposed choirs.

The earlier practice of printing on the music "*buoni da cantare et sonare con ogni sorte di instrumenti*" (good for singing and playing on any sort of instruments) was common in Gabrieli's time. Apparently the publishers were disinclined "to limit performances to one set of instruments, and therefore Gabrielli's wish for precise instrumentation was only partly realized."[34]

At the end of the sixteenth century, the family of trombones was made up of alto, tenor, and bass instruments.[35] The standard lengths of tubing and the specific keys of the various instruments are somewhat ambiguous, clouded by a frequent use of crookings which changed the pitch constantly. Probably the most used keys were F, E-flat and D (alto); B-flat, A, E and D (tenor); and F, A and E-flat (bass).

Evidence has shown the trombone to be one of the most illustrious and colorful instruments of the Renaissance. Although most of the compositions employing the instrument were small in scope, its use was frequent and varied. The style of writing greatly resembled that of vocal writing but a few instrumental idioms are found. Perhaps the popularity of the trombone is best explained when consideration is given to its sliding mechanism. This simple, yet most unique device, placed the trombone well ahead of its nearest competitor. The advantages of diatonic and chromatic tones enabled the instrument to meet the demands of composers at a time when other wind instruments were still limited to the production of overtones and military sounds. While the Renaissance instrument differed relatively little from the modern trombone, there are many who believe that some of its characteristics were not only equal to, but superior to that of its successor.

It is interesting that the trombone has been very much caught up in the modern revival of early instruments and their music. Helmut Finke, Joseph Monke and the Alexander Brothers of Germany are all importing reproductions. These, of course, are an added aid to those wishing to perform Renaissance music "authentically." It is well to remember, however, that a modern trombone played in a subdued, vocal manner, would be less of a desecration than a genuine, antique sackbut played in a bombastic, unimaginative style less than appropriate for the music.

FOOTNOTES

1) A long straight medieval trumpet with a cylindrical tube. See PLATE I (1).

2) Francis W. Galpin, *Old English Instruments of Music: Their History and Character* (London: Methuen and Co., Ltd., 1932), p. 207.

3) A fretted plucked instrument not unlike the banjo in appearance.

4) Gustave Reese, *Music in the Renaissance* (New York: W. W. Norton & Co., Inc., 1959), p. 715.

5) The word trombone comes from the Italian term tromba meaning "big trumpet."

6) The evolution of the trombone (Posaune) from Busine is especially interesting in reference to the German tradition of placing the trombone in the hands of the Archangel of the Judgment day.

7) The English *Slide Trumpet*, said to have been invented by John Hyde in 1804, had a U-shaped slide like that of the trombone only with a spring attached which would return the slide to its original position.

8) Illustrated in Plate I (2).

9) Galpin, p. 208.

10) Early double reed instrument made from one solid block of wood with two bores, one descending, one ascending and terminating with a bell.

11) Reproduced in Canon Galpin's very excellent paper on The History and Evolution of the Sackbut. See footnote 27.

12) Galpin, *Old English . . .*, p. 208.

13) Eric Blom (ed.), *Groves Dictionary of Music and Musicians*, 5th ed., Vol. VIII (London: MacMillan & Co., Ltd., 1954), p. 555.

14) Reese, pp. 35-36.

15) Blom, p. 555.

16) Shawms or bagpipes.

17) Edmund A. Bowles, "Tower Musicians in the Middle Ages," *Brass Quarterly*, V, No. 3 (1962), p. 97.

18) Ibid., p. 100.

19) Reese, p. 721.

20) German *zink*. A wooden instrument covered with leather having a cup mouthpiece and fingerholes.

21) A curved, nearly cylindrical double reed instrument with a wind cap which kept the player's lips from touching the reed. Its shape was somewhat like the letter J.

22) Reese, p. 366.

23) Curt Sachs, "Chromatic Trumpets in the Renaissance," *Musical Quarterly*, I, No. 2 (1957), p. 66.

24) Denis Arnold, "Brass Instruments in Italian Church Music of the Sixteenth and Early Seventeenth Centuries," *Brass Quarterly*, I, No. 2 (1957), p. 86.

25) The Galpin Society, founded in 1946 for the purpose of investigating the history and use of musical instruments, uses the 1557 Neuschel sackbut as its emblem.

26) Adam Carse, *Musical Wind Instruments* (New York: Da Capo Press, 1965), p. 251.

27) Francis W. Galpin, "The Sackbut, Its Evolution and History," *Proceedings of the Royal Music Association* (1906), p. 12.

28) Mersenne, p. 342.

29) Robert Sheldon, who has personally examined and blown the instrument (in first position only), has described it to me in a letter.

30) Characteristic mouthpieces may also be observed on the trombones in PLATE I.

31) Nicholas Bessaraboff, *Ancient European Musical Instruments* (Boston: Harvard University Press, 1941).

32) Mersenne, p. 342.

33) Frank Harrison and Joan Rimmer, *European Musical Instruments* (London: Studio Vista, 1946), p. 25.

34) Kenton, p. 74.

35) See PLATE V.

BIBLIOGRAPHY

Books

Apel, Willi. *Harvard Dictionary of Music*. Cambridge, Massachusetts: Harvard University Press, 1964.

Baines, Anthony. *Musical Instruments Through the Ages*. Baltimore: Penquin Books, 1961.

Bate, Phillip. *The Trumpet and Trombone*. New York: W. W. Norton and Co., Inc., 1966.

Bessaraboff, Nicholas. *Ancient European Musical Instruments*. Boston: Harvard University Press, 1941.

BEST COP

Carse, Adam. *Catalogue of the Adam Carse Collection of Old Musical Wind Instruments*. London: London County Council, 1951.

Carse, Adam. *Musical Wind Instruments*. New York: Da Capo Press, 1965.

Elson, Arthur. *Orchestra Instruments and Their Use*. Boston: L. C. Page and Company, 1916.

Elson, Louis C. *Shakespear in Music*. Boston: L. C. Page and Company, 1914.

The Encyclopedia Britannica, A Dictionary of Arts, Sciences, Literature and General Information. 11th ed. Vol. XXIII. Cambridge, England: University Press, 1911.

Galpin, Francis W. *A Textbook of European Musical Instruments, Their Origin, History and Character*. New York: E. P. Dutton and Co., Inc., 1937.

Galpin, Francis W. *Old English Instruments of Music. Their History and Character*. London: Methuen and Co. Ltd., 1932.

Geiringer, Karl. *Musical Instruments, Their History in Western Culture from the Stone Age to the Present*. trans., Bernard Maell. New York: Oxford University Press, 1945.

Grout, Donald Jay. *A History of Western Music*. New York: W. W. Norton and Co., Inc., 1960.

Grove's Dictionary of Music and Musicians. Eric Blom, (ed.), 15th edition. Vol. VIII, SP-V10., London: MacMillan and Co., Ltd., 1954.

Harrison, Frank and Rimmer, Joan. *European Musical Instruments*. London: Studio Vista, 1964.

Hughes, Don Anselm and Abraham, Gerald. (Editors) *Ars Nova and the Renaissance*. (1300-1540) Vol. III: *The New Oxford History of Music*. London: Oxford University Press, 1960.

Kinski, George. *Album Musical*. Paris: Librairie Delagrove, 1930.

Lang, Paul Henry and Bettmann, Otto. *A Pictorial History of Music*. New York: W. W. Norton and Co., Inc., 1960.

Mersenne, Marin. *Harmonie Universelle, The Books on Instruments*. trans., Roger E. Chapman. The Hagul: Martinus Nijhoff, 1957.

Praetorius, Michael. *Syntagma musicum*. Vol. II: *Organographia*. E. Holwein, Wolfenbuttel, 1615-19. Facsimile reprint. Kassel: Barenreiter, 1958.

Reese, Gustave. *Music in the Renaissance*. New York: W. W. Norton and Co., Inc., 1959.

Schwartz, H. W. *The Story of Musical Instruments, From Shepherd's Pipe to Symphony*. Garden City, New York: Garden City Publishing Co., Inc., 1943.

Winterfield, Carl Von. *Music of Gabrielli and His Time*. Reissue of the Musical Part (Vol. III) of *Johannes Gabrielli und Sein Zeitahlter*. Berlin, 1834. Ossining, New York: William Salloch, 1960.

Peroidicals

Arnold, Denis. "Brass Instruments in Italian Church Music of the Sixteenth and Early Seventeenth Centuries," *Brass Quarterly*, Vol. 1, No. 2, (1957), pp. 81-92.

Bowles, Edmund A. "Tower Musicians in the Middle Ages," *Brass Quarterly*, Vol. V, No. 3, (1962), pp. 91-103.

Fitzgibbon, H. Macouley. "Instruments and Their Music in the Elizabethan Drama," *Musical Quarterly*, Vol. XVII, (1931), pp. 319-329.

Horsley, Imogene. "Wind Techniques in the Sixteenth and Early Seventeenth Centuries," *Brass Quarterly*, Vol. IV, No. 2, (1960), pp. 49-62.

Kenton, Egon F. "The 'Brass' Parts in Gabrielli's Instrumental Ensemble Compositions," *Brass Quarterly*, Vol. 1, No. 2, (1957), pp. 73-80.

Montgomery, Franz. "The Musical Instruments in 'The Canterbury Tales,'" *Musical Quarerly*, Vol. VII, (1931), pp. 439-448.

Riley, Maurice W. "A Tentative Bibliography of Early Wind Instrument Tutors," *Journal of Research in Music Education*, Vol. VI, No. 1, (1958), pp.

Sachs, Curt. "Chromatic Trumpets in the Renaissance. *Musical Quarterly*, Vol. 36, (1950), pp. 62-66.

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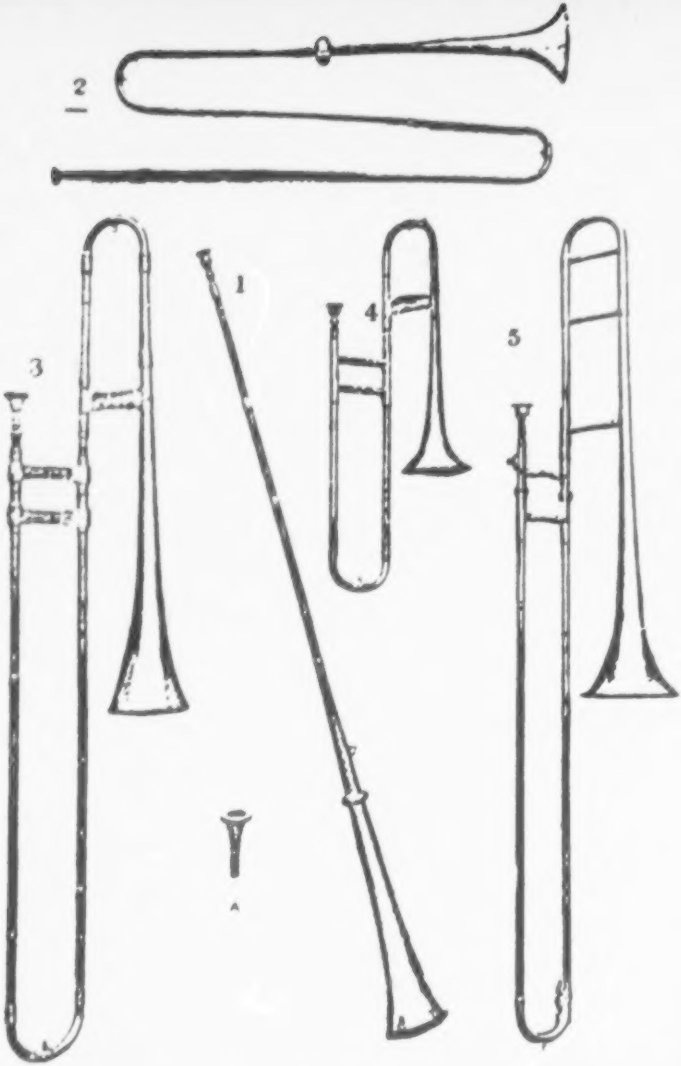

PLATE I

Reproduced from Galpin's article "The Sackbut, Its Evolution and History," *Proceedings of the Royal Music Association* (1906). PLATE III in Galpin's paper.

1. Busine, by Hainlein, 1460.
2. Folded trumpet (earliest Medieval form).
3. Sackbut, by Jorg Neuschel, 1557.
    A. Early shape of bass mouthpiece
4. Descant trombone, by Johann Schmied, 1781.
5. Tenor trombone, by Boosey & Co., 1907.

A STUDY OF THE STATE MUSIC FESTIVALS IN MISSOURI FROM 1959-1966

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In 1965 the author made a study of the District Music Festival of the State of Missouri which was published in this Journal (Vol. 1, No. 5). In connection with that study, recommendations were made concerning some aspects of the district festival and the manner in which they were organized and operated. It was the intent of the study to bring into focus figures and percentages that had not previously been made available to the music educators of the state of Missouri. As a result of that study, much discussion was aroused and several decisions were made by leaders in music education. The State High School Activities Association made plans to alter some of its organizations regarding the festivals and more complete tallies and percentages were forthcoming with the 1966 district and state festivals.

This present study is meant to bring into focus some of the results of the state festivals in order that figures and percentages might be viewed by music educators and administrators of the state.

Of significant importance is the increase in participation of schools at the state level. From a total of 298 schools in 1959, the 1966 state festival listed over 360 schools participating. It is important to note that beginning in 1960, when high schools were arranged into four divisions, according to pupil enrollment, in every size classification there has been an increase in the number of schools participating in the state festival. While festival enrollments have increased, the number of school districts in the state has not changed proportionately. In fact, some consolidation of schools has occurred. In spite of this, however, the number of participants has increased.

The current research was designed as a follow-up to the District Music Festival research that was conducted in 1966. Some research has to do with investigation of results, or as in some cases, to study certain actions and reactions. It has not been the purpose of these two studies to "cause" any particular action to take place. It is hoped that further investigation does not cause the professional teacher to be disturbed by assumptions on their part not intended by the author.

TABLE I

Number of Schools Attending The State Festival

Year	Class A	B	C	D	Total
1959	30	111	157	No Division	298
1960	24	35	128	118	305
1961	30	38	126	123	317
1962	33	51	134	136	354
1963	37	56	132	135	360
1964	44	56	134	129	373
1965	42	56	145	119	362
1966	48	54	143	112	357

In Missouri it has been the practice to require that all participants in the state music festival must first get a superior rating at the district music festivals. Festivals were held before the year 1959 but records were not kept by the Activities Association. The Missouri Music Educator's did not become concerned with this kind of record keeping until the number of the festival entries demanded attention.

In the early years of state music festivals, schools were permitted to enter large ensembles (bands, orchestras, choruses). However, it became evident that much money was being spent on transportation for large groups and much of the activity was a duplication. Today, only solos and small ensembles may be taken to the state music festival center, and of course, only if these organizations have received a number one rating at the district level. The elimination of large ensembles at the state festival is still discussed by many teachers.

Effort has been made by the Missouri High School Activities Association to reduce the number of state festival entries by encouraging judges at the district centers to grade participants a little more carefully, trying to allow only those students to attend the state festivals who had musically earned the coveted right. In spite of these efforts, more and more students have earned their right to take part at the state level. A review of the district festival results in an earlier research will disclose these results more clearly.

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TABLE II

Distribution of State Festival Results Expressed in Percentages

	Class A	*Class B*	*Class C*	*Class D*
		1959		
Rating 1	46.8%	36.9%	33.8%	
II	40.8%	61.2%	55 %	
III	12.0%	13.7%	23.7%	
IV	.3%	.6%	.3%	
		1960		
I	50.2%	45.8%	49.2%	32.6%
II	48.2%	51.1%	48.5%	52.7%
III	3.8%	12.4%	12.4%	14.5%
IV	2.0%	1.1%	.3%	.2%
		1961		
I	50.9%	42.6%	33.4%	25.5%
II	39.1%	55.2%	54.5%	55.4%
III	9.2%	8.5%	10.8%	18.2%
IV	.9%	1.0%	1.2%	.7%
		1962		
I	48.1%	48.0%	36.7%	33.7%
II	42.5%	43.6%	50.3%	52.5%
III	8.2%	8.3%	12.5%	13.3%
IV	1.0%	0.0%	.3%	.4%
		1963		
I	37.8%	38.7%	37.8%	37.1%
II	51.6%	50.2%	51.6%	49.5%
III	10.1%	10.8%	10.1%	12.7%
IV	.2%	.2%	.3%	.5%
		1964		
I	50.9%	43.4%	41.0%	32.8%
II	41.5%	44.6%	47.5%	53.3%
III	7.4%	11.1%	11.0%	13.4%
IV	.1%	.1%	.3%	.3%
		1965		
I	51.1%	38.7%	35.6%	30.1%
II	41.8%	50.6%	50.7%	50.7%
III	6.6%	10.3%	13.3%	18.5%
IV	.3%	1.0%	.3%	.6%
		1966		
I	50.7%	39.9%	29.8%	26.3%
II	37.6%	45.4%	48.0%	46.0%
III	10.1%	13.1%	20.9%	25.7%
IV	.1%	.7%	1.2%	1.8%

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TABLE III

Distribution of Results According to Specific Entries:

IE—Instrumental Ensembles	IS—Instrumental Solos
VE—Vocal Ensembles	VS—Vocal Solos

1959 STATE MUSIC FESTIVAL

Class A Schools (30 Schools)

	Ratings:				
Entries	I	II	III	IV	Total
IE	37	30	2	0	69
VE	17	14	2	0	33
IS	70	52	23	1	146
VS	24	33	11	0	68
Total	148	129	38	1	316

Class B Schools (111 Schools)

	Ratings:				
Entries	I	II	III	IV	Total
IE	46	91	16	1	154
VE	41	48	6	0	95
IS	92	139	40	1	272
VS	44	75	19	2	140
Total	223	353	81	4	661

Class C Schools (157 Schools)

	Ratings:				
Entries	I	II	III	IV	Total
IE	27	36	27	0	90
VE	31	37	23	1	92
IS	74	107	23	0	204
VS	27	65	26	1	119
Totals	159	245	99	2	505

1960 State Music Festival

Class A Schools (24)

	Ratings:				
Entries	I	II	III	IV	Total
IE	27	50	1	0	78
VE	22	8	1	0	31
IS	86	52	7	3	148
VS	31	45	3	4	83
Total	166	155	12	7	340

Class B Schools (35)

	Ratings:				
Entries	I	II	III	IV	Total
IE	16	35	11	0	62
VE	25	17	4	0	46
IS	38	43	12	2	95
VS	27	25	3	0	55
Total	106	120	30	2	258

Class C Schools (128)

	Ratings:				
Entries	I	II	III	IV	Total
IE	62	97	27	1	167
VE	54	39	8	0	101
IS	134	107	24	2	267
VS	62	40	17	0	119
Total	312	283	76	3	674

Class D Schools (118)

	Ratings:				
Entries	I	II	III	IV	Total
IE	18	43	9	0	70
VE	16	37	15	1	69
IS	53	69	13	0	135
VS	35	50	18	0	103
Total	122	199	55	1	377

1961 STATE MUSIC FESTIVAL

CLASS A SCHOOLS (30)

	Ratings:				
Entries	I	II	III	IV	Total
IE	44	51	8	0	103
VE	18	18	0	0	36
IS	107	67	20	3	197
VS	51	32	12	1	96
Total	220	168	40	4	432

CLASS B SCHOOLS (38)

	Ratings:				
Entries	I	II	III	IV	Total
IE	25	46	2	0	73
VE	27	28	6	1	62
IS	51	38	10	2	101
VS	23	29	7	0	59
Total	126	141	25	3	295

CLASS C SCHOOLS (126)

	Ratings:				
Entries	I	II	III	IV	Total
IE	52	100	27	0	179
VE	34	61	4	0	99
IS	92	124	28	7	251
VS	41	72	12	1	126
Total	219	357	71	8	655

CLASS D SCHOOLS (123)

Entries	Ratings: I	II	III	IV	Total
IE	15	38	8	0	61
VE	13	28	6	1	48
IS	25	40	23	1	89
VS	13	37	10	0	60
Total	66	143	47	2	258

1962 STATE MUSIC FESTIVAL

CLASS A SCHOOLS (33)

Entries	Ratings: I	II	III	IV	Total
IE	43	62	11	3	119
VE	37	8	1	0	46
IS	107	79	10	1	197
VS	46	67	10	1	124
Total	233	216	32	5	486

CLASS B SCHOOLS (51)

Entries	Ratings: I	II	III	IV	Total
IE	54	48	11	0	113
VE	37	36	5	0	78
IS	85	60	9	0	154
VS	32	45	11	0	88
Total	208	189	36	0	433

CLASS C SCHOOLS (134)

Entries	Ratings: I	II	III	IV	Total
IE	89	110	22	1	222
VE	21	59	18	0	98
IS	115	146	32	1	294
VS	51	64	22	1	138
Total	276	379	94	3	752

CLASS D SCHOOLS (125)

Entries	Ratings: I	II	III	IV	Total
IE	27	60	12	0	99
VE	37	29	9	2	77
IS	61	75	24	0	160
VS	22	65	13	0	100
Total	147	229	58	2	436

1963 STATE MUSIC FESTIVAL

CLASS A SCHOOLS (37)

Entries	Ratings: I	II	III	IV	Total
IE	76	50	5	0	131
VE	37	22	4	0	63
IS	165	83	14	2	264
VS	62	61	12	0	135
Total	340	216	35	2	593

CLASS B SCHOOLS (56)

	Ratings:				
Entries	I	II	III	IV	Total
IE	55	57	9	0	121
VE	32	51	9	0	92
IS	72	96	16	1	185
VS	34	46	20	0	100
Total	193	250	54	1	498

CLASS C SCHOOLS (132)

	Ratings:				
Entries	I	II	III	IV	Total
IE	92	120	17	2	231
VE	33	49	11	1	94
IS	123	154	32	0	309
VS	47	79	19	0	145
Total	295	402	79	3	779

CLASS D SCHOOLS (134)

	Ratings:				
Entries	I	II	III	IV	Total
IE	54	50	6	0	110
VE	30	43	13	1	87
IS	76	89	27	0	192
VS	29	70	19	2	120
Total	189	252	65	3	509

1964 STATE MUSIC FESTIVAL

CLASS A SCHOOLS (44)

	Ratings:				
Entries	I	II	III	IV	Total
IE	104	85	15	0	204
VE	33	35	11	0	79
IS	181	136	18	0	335
VS	88	75	15	1	179
Totals	406	331	59	1	797

CLASS B SCHOOLS (56)

	Ratings:				
Entries	I	II	III	IV	Total
IE	63	80	12	1	156
VE	40	27	10	2	79
IS	78	76	13	0	167
VS	38	42	21	1	102
Total	219	225	56	4	504

CLASS C SCHOOLS (134)

	Ratings:				
Entries	I	II	III	IV	Total
IE	85	124	26	0	235
VE	37	48	18	0	103
IS	136	120	22	1	279
VS					
Total	258	292	66	1	635

CLASS D SCHOOLS (129)

	Ratings:				
Entries	I	II	III	IV	Total
IE	41	68	22	0	131
VE	37	58	14	0	109
IS	68	87	11	0	166
VS	38	85	28	2	153
Total	184	298	75	2	559

1965 STATE MUSIC FESTIVAL

CLASS A SCHOOLS (42)

	Ratings:				
Entries	I	II	III	IV	Total
IE	82	98	15	2	197
VE	46	34	5	1	86
IS	180	130	22	0	332
VS	107	78	12	0	197
Total	415	340	54	3	812

CLASS B SCHOOLS (56)

	Ratings:				
Entries	I	II	III	IV	Total
IE	47	101	26	4	178
VE	37	44	11	0	92
IS	78	115	12	1	206
VS	66	44	13	1	124
Total	228	304	62	6	600

CLASS C SCHOOLS (145)

	Ratings:				
Entries	I	II	III	IV	Total
IE	68	136	50	1	255
VE	33	57	20	0	110
IS	126	167	15	0	308
VS	85	90	15	0	190
Total	312	450	100	1	863

CLASS D SCHOOLS (119)

	Ratings:				
Entries	I	II	III	IV	Total
IE	29	52	22	1	104
VE	17	58	28	2	105
IS	66	83	21	0	170
VS	51	81	29	0	161
Total	163	274	100	3	540

1966 STATE MUSIC FESTIVAL

CLASS A SCHOOLS (48)

	Ratings:				
Entries	I	II	III	IV	Total
IE	79	69	20	2	170
VE	44	35	12	0	91
IS	194	141	23	0	358
VS	85	63	25	0	173
Total	402	308	80	2	792

CLASS B SCHOOLS (54)

	Ratings:				
Entries	I	II	III	IV	Total
IE	61	90	21	2	174
VE	29	24	15	1	69
IS	88	85	18	1	192
VS	41	50	22	0	113
Total	219	249	76	4	548

CLASS C SCHOOLS (143)

	Ratings:				
Entries	I	II	III	IV	Total
IE	54	112	38	5	209
VE	41	46	30	1	118
IS	113	148	46	1	308
VS	40	93	60	3	196
Total	248	399	174	10	831

CLASS D SCHOOLS (112)

	Ratings:				
Entries	I	II	III	IV	Total
IE	22	52	24	2	100
VE	12	32	25	3	72
IS	64	95	31	3	193
VS	30	45	45	1	121
Total	128	224	125	9	486

Interpretation of Tables

A better comparison might be to measure the number of entries against the total enrollment of schools, for with the growth in high school enrollment, the number of entries would tend to increase. The next few years, however, should see a leveling off of the number of entries. It has been interesting however, to note the increase of the number of entries in spite of the emphasis on other subjects in the curriculum.

To attempt to draw any conclusions from the number of entries and the results of the student performances is difficult. The results may or may not be consistent but each school size has peculiarities of its own, not related to other school sizes. The most consistent result observed is the fact that the great majority of students earned ratings of number one or two in every school category.

The larger number of low ratings seemed to be assigned to students from small schools. This could be attributed to the fact that students living in larger cities have better access to private teachers. This does not infer less ability on the part of teachers in large cities, but rather, that teachers are able to encourage students in large cities to take advantage of the knowledge of the professional teacher.

One significant factor which emerges from this study is the consistently larger number of instrumental as opposed to vocal entries, especially among the large schools. The "B", "C", and "D" schools seem to keep a better balance between vocal and instrumental activity than the larger class "A" schools.

The writer would suggest that readers study the results of the ratings. Many interesting facets of comparison emerge and one can only conjecture about the causes of these seeming inconsistencies.

Recently, an attempt has been made to up-grade the ratings of high school students who participated in the state music festivals. This has been done, primarily, by demanding a better performance by the student at the district festival. No one can say with certainty that this has taken place. The managers of the district festivals have always been interested in making their festivals meaningful to students and teachers alike. To prove this has happened is difficult. Even the statistics do not always provide consistent answers. The percentage points do not really change very much. The results of the year 1963 interestingly display a most even distribution between ratings in each size school and between ratings.

One could reason that as a result of making it more difficult to obtain a superior rating at the district festival, judges at the state festival in 1966 were able to give a larger number of one ratings.

A factor which seems to indicate that the district festivals have more rigorous standards is the percentage of "good" or number III ratings given at the state festival. This percentage has become smaller except in 1965 and 1966.

The only conclusion that can be drawn with certainty is that the performance when listened to by human beings, will always elicit different reactions and different evaluations depending somewhat on the time and place of the performance.

Conclusions and Suggestions:

Any conclusions drawn from this research can be based upon opinion only. It could be rewarding, however, to think through the following questions:

1. Are two music festivals needed (district and state)?

2. Would it be more practical to have just a district festival but send the large ensembles on a different date than the small ensembles, thus eliminating the state festival?

3. Is it necessary to reconsider the combination of instruments permitted to enter the festivals?

4. Would it be desirable to allow schools to send soloists in proportion to the number of ensembles entered?

5. The St. Louis Suburban Music Educators, which conducts its own solo and ensemble festivals, has recently suggested that con-

sideration be given to a special 50 state meeting on the state of the music contest and festival. This appears to the author to be an exciting and potentially valuable proposal.

The writer wishes to thank the Missouri State High School Activities Association and its executive secretary, Mr. Irvin Keller, for its aid in this study. Commendations are in order for the many managers of both district and state festivals for the fine organization and arrangements made at all festivals. The problem of scheduling is a challenge that few people are able understand. The logistics of such an undertaking are of such proportions that only those working with the problem can truly understand them.

A word of thanks is due the many teachers who send well prepared singers and instrumentalists year after year. No less appreciation is due the many adjudicators who spend many hours of trying to write helpful words to aspiring musicians. It is regrettable that so many laymen have never had the opportunity to watch young America seriously and eagerly playing and singing to gain constructive criticism.

The writer hopes that music teachers over the state of Missouri will take time to commend those responsible for festival organization. It will be helpful if your comments are constructive for better organization. Music teachers should contact their M.M.E.A. representative who serves on the Board of Control for the State Activities Association when changes are desired.

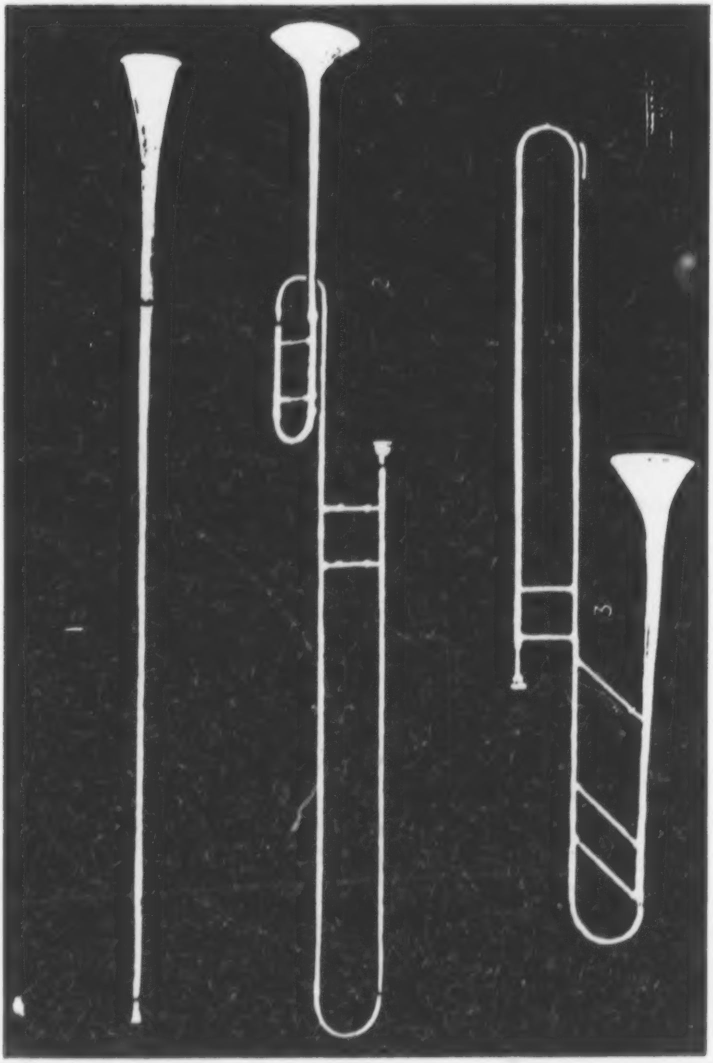

PLATE II
By courtesy of C. G. Conn, Elkhart, Indiana

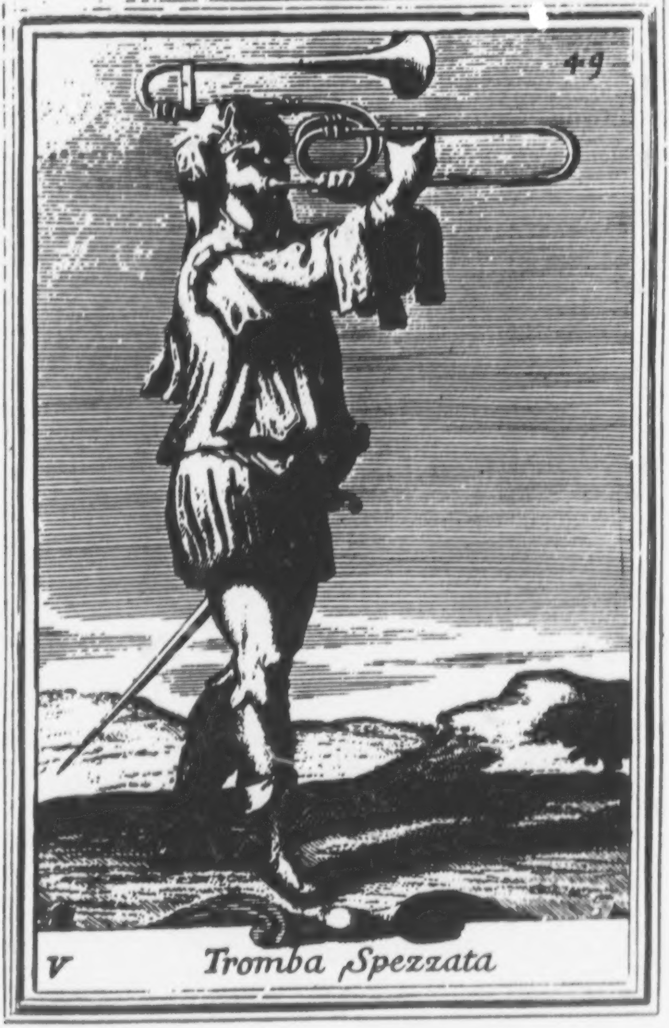

PLATE III
Tromba Spezzata (Plate V) from F. Bonanni's *The Showcase of Musical Instruments*. All 152 Plates from the *Gabinetto Armonico*, (1723). Text by F. L. Harrison and J. Rimmer. New York: Dover Publications, Inc., 1964.

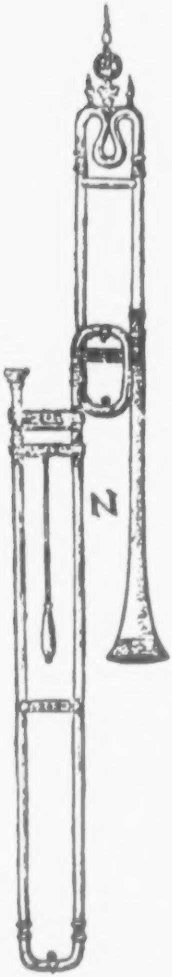

PLATE IV
Trombone taken from Plate VI of Pratorius' *Theatrum Instrumentorum* (1620), the illustrated supplement to his *De Organographia* (Vol. II of Syntagma Musicum). E. Holwein. Wolfenbuttel. 1615-19. Facsimile reprint. Kassel: Barenreiter, 1958.

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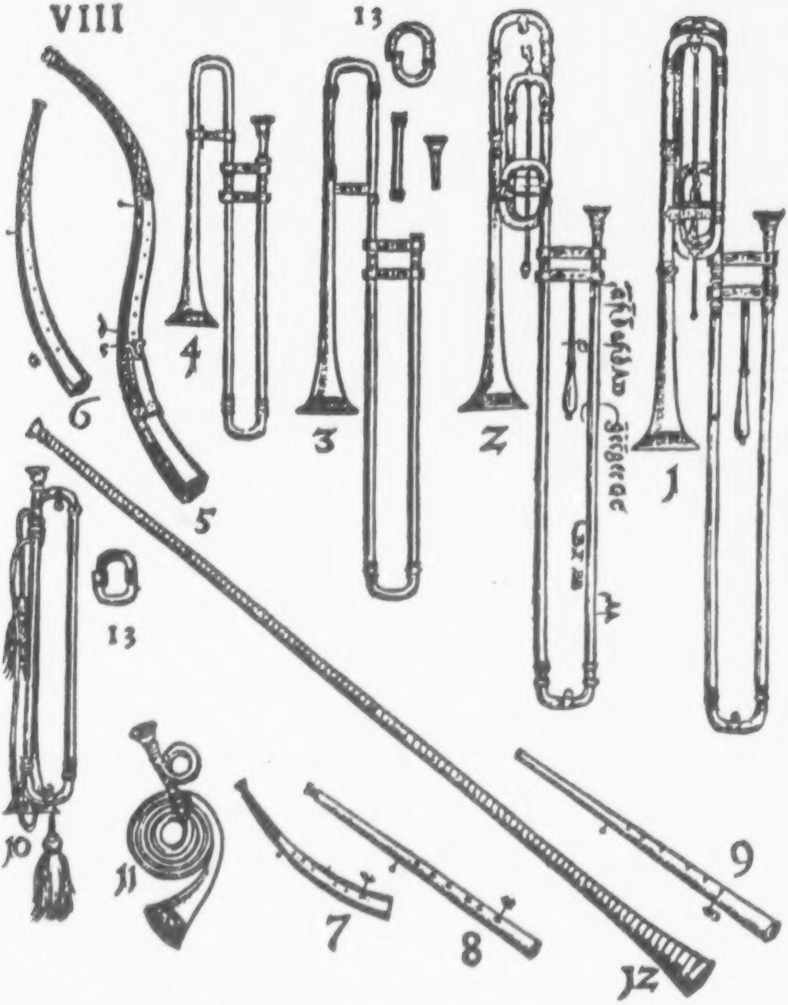

PLATE V

Plate VIII from Pratorius' *Theatrum Instrumentorum*.

1. 2. Quart-trombones. 3. Ordinary (tenor) trombone. 4. Alto trombone. 5. Cornon, great tenor cornet. 6. Ordinary choir zink (cornett). 7. Descant zink. 8. Straight zink with mouthpiece. 9. Mute zink. 10. Trumpet. 11. Hunting trumpet. 12. Wooden trumpet. 13. Crook, transposing a tone lower.

VAILABLE

TASTE, MUSIC, AND EDUCATION

A Survey of Comments on Taste in General, Music Taste, and How It Relates to Music Education

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It is common enough to hear a person described as having "good taste" or "bad taste." These words have been and are a part of our standard vocabulary. And yet, when one tries to define what "taste" is, apart from a superficial comment that good taste is "liking the things that are right to like" and bad taste is "liking what is low in taste, or what isn't the choice of the status people," one uncovers a complex of various meanings and approaches to the subject.

This paper is an attempt to present the various thoughts of philosophers, psychologists, sociologists, and other writers on the concept of taste or the standards of tastes against which beauty is measured. The comments can generally be classified as taking one of two approaches — the "classical" or the "sociological." The classicist considers that taste is an absolute standard which will reveal the beauty in art and which is universal, deriving from something ultimate and true in the world; taste is approached through the study of the nature of beauty, which is the central concern. The sociologists' viewpoint is that taste is a social factor, arising from the social conditions surrounding people and from their interaction with each other and with art. They are more concerned with the science of taste than with the nature of beauty. Today the sociologists' viewpoint seems more accepted and most of the sociologists and psychologists are studying taste from this stand. However, the first ones to consider the subject of taste were the philosophers, and particuarly those writing in the philosophical branch called aesthetics, the field where the term "taste" first arose in the 18th century.

Philosophy, being an ancient discipline (psychology and sociology are comparative infants), will be the first approach that we will study in this paper, following it with approaches made by more recent writers, especially in psychology and sociology. Following a general study of opinions on taste itself, we then move to articles concerning taste and music education, our ultimate goal being to answer the questions "What is the relationship between music education and taste formation?" and "Does music education have any effect on taste?"

Because music is our field of study, this paper is arbitrarily limited to general comments on taste by people related to and interested in music to the exclusion of the other arts, as well as philosophical comments on the nature of beauty. I do not pretend to have reached all the sources of comments about taste; rather this is a general overview of the subject which should and can lead to much more work in the specific fields of the nature of musical taste and the effect of music education on taste formation.

The Greeks' Ideas About the Nature of Beauty

Although the word taste was not used by philosophers until the 18th century, a background of thought of earlier philosophers on the various answers to the nature of beauty is important to understand later approaches. Philosophers' approach to taste was through a consideration of the nature of beauty, and the value of judgments of beauty in art and nature.

The history of aesthetics as a field of interest goes back to Greek civilization and the three great philosophers, Socrates, Plato, and Aristotle. Croce recognizes Socrates as having opened up the field.

> " . . . the problem of the nature of art assumes as solved those problems concerning the difference between rational and irrational, material and spiritual, bare fact and value, etc. This was first done in the Socratic period, and therefore the aesthetic problem could only arise after Socrates.

Plato was the first Western writer to discuss art objects and artists seriously and he was not supporting art as a divine thing. The basic concept he formulated was the concept of mimesis, or imitation. Thus art "does not realize the ideas, or the truth of things, but merely reproduces natural or artificial things, which are themselves mere shadows of the ideas."

Bernard Bosanquet, looking at the ancient world from a modern aesthetic point of view, finds the Greek theory of the Beautiful based on three principles, the moralistic, the metaphysical, and the aesthetic. The moralistic principle states that "if artistic representation is related to many only as commonplace reality, then . . . it follows that *morally* the representations of art must be judged by the same moral criteria as real life." What is immoral in life is immoral when represented in art.

The metaphysical principle states that "if artistic representation differs from the nature which it represents, whether human or other, only in the degree and completeness of its existence, then it differs only for the worse, and is a purposeless re-duplication of what already was in the world." Plato's discussions of art were critical of art, saying that since it only imitated life, it did not have as much value as life did.

The aesthetic principle states that:

> If artistic presentation can never have a deeper content than the normal or common-place object of perception which it represents, then there can be no explanation of beauty involving any deeper attributes than those which normal perception is able to apprehend in common-place reality. In other words, it follows that, *aesthetically*, beauty is purely formal, consisting in certain very abstract conditions which are satisfied, for example, in elementary geometrical figures as truly as in the creations of fine art.

Thus beauty in Greek thought was the formal beauty of the object, consisting in its lines, its unity and variety, its simplicity, etc.

Aristotle generally accepted the idea that art was imitation of living things and ideas, but he did advance the idea that art that copied unpleasant things could still be pleasant.

> Since the use of intelligence, and the feeling of wonder, are both of them pleasant, it necessarily follows that things are pleasant which are of the class of mimetic art, such as painting and statuary and poetry and everything which is well imitated, even when the object itself is not pleasant. For it is not the object which gives the pleasure, but inference takes place that 'this is that,' so that an exercise of the intelligence is brought about.

Here is a nucleus of the idea that pleasure in art is derived not from the object alone, but from employment of the mind in looking at the object.

These three principles outline the basic problems of beauty as discussed by later philosophers as well as the Greeks, and they embody some of the ways in which art is judged. In relation to the metaphysical principle, the Greeks considered art imitative, whereas later philosophers believed in the antithesis of imitation: that art is symbolic of non-imitative concepts. The moralistic principle of art raises the issue of real interest vs. aesthetic interest. That is, whether art is beautiful because it exists for a purpose, or beautiful because it exists without relation to a purpose. The Greeks and later philosophers considered art to serve a utilitarian, or hedonistic purpose. Kant was the first to establish art as free from any other purpose, a real revolution in the field of aesthetics. The third antithesis concerns the aesthetic principle — abstract analysis vs. concrete analysis. It was logical during the Greek civilization to analyse beauty abstractly, when progress in mathematics was great and importance was being placed on geometric and harmonious figures, especially by the Pythagoreans. Later philosophers looked deeper for an analysis of beauty, such as in concrete analysis, although this could not be expected by critics examining an art supposedly purely imitative.

The Middle Ages

At the end of antiquity another philosopher became important for his influence over the Middle Ages — Plotinus. He introduced the mystic view of art. It was then that art began to be understood as symbolic, not imitative. Starting from Plato's view that the object is less than the artist, Plotinus determines:

> . . . but still, if any one condemns the arts, because they create by way of imitation of nature, first we must observe that natural things themselves are an imitation of something further, and next we must bear in mind that the arts do not simply imitate the visible, but go back to the reasons from which nature comes; and further, that they create

> much out of themselves, and add to that which is defective, as being themselves in possession of beauty . . .

Thus Plotinus, by allowing art to express spiritual concepts, did not limit the judgment of beauty by abtsract analysis of the object, but broadened the standards by which beauty could be judged.

During the Middle Ages, aesthetic thought did not seem to "advance," and art was in the service of God and religion. Art was moral or pedagogic in purpose, and there was no aesthetic consciousness, even though the production of art was great. Frank P. Chambers, in his book on *Perception, Understanding and Society*, believes as false the assumption that the definition of art has always been the same. "Taste is allowed to change, and the fashions of taste become matters of some interest; but each changing phase of taste is assumed to express the self-same 'art.' Yet the assumption so made, we believe, is false in fact. In order not to judge the art of other periods by our own standards it is necessary to find out what people of other ages considered and felt about their arts. It is at this point that Chambers defines art in the Middle Ages as meaning making or doing (it is so used in the Bible); and because of this definition and the lack of writings on art, he states that the Middle Ages had no aesthetic consciousness (i.e., a recognition that art was Fine Art, and could simply be enjoyed for its beauty, notwithstanding any other purpose). Therefore, " . . . artistic perception has not always been what a modern critic might assume and . . . we must in consequence be wary of our use of the words or terms for art."

The Renaissance

Chambers continues his argument by stating that the aesthetic revolution did start in the Renaissance.

> The Renaissance objectified thought and learning; it likewise objectified the arts. It discovered that *thing*, unknown as such before, the object informed with a certain quality, 'art,' . . . to be observed by an observer, judged by a judge, criticized by a critic, a thing to be hung in a picture gallery, or set up on a pedestal, . . . or played in a concert chamber.

The Renaissance not only objectified art, but introduced the aesthetic observer, as well as the artist, patron, critic, and public. And with the existence of aesthetic sensitivity, the questions arise concerning what distinguishes art from non-art, and what it is that all art objects have in common which causes them to be considered art. Thus, the chief characteristic of Renaissance aesthetics was the association of the arts with beauty.

The Baroque Period

Following the Renaissance, during the Baroque period, the first insistence upon distinguishing intellect and wit (ingegno) was made; corresponding to this arose a "faculty of judgment, which was not ratiocination or logical judgment, because it judged 'without discourse' or 'without concepts,' and came to be called 'taste.'" The phrase "je ne sais quoi" (I don't know) was frequently used, indicating the mysteriousness of taste and the lack of logical concepts within it.

The Eighteenth Century

The next historical period of great interest to us is the 18th century. Cartesianism, through its stimulation of inquiry into the minds, had given rise to the role of imagination in understanding the arts. Giambattista Vico, his *Scienza Nuova,* 1725, distinguished between poetic logic and intellectual logic. He opposed poetry (representative of the arts) to philosophy (the intellect at work), and arrived at an independent imagination, which would be strong when reason was weak, and weak when reason was strong. Poetry, thus, deals with particulars, and philosophy with the abstract. Poets are concerned with the feelings of the human race, philosophers with the intellect. The poetic age preceded the philosophic naturally. Vico revealed that the study of Asthetics was an autonomous activity.

Baumgarten, in 1735, was the first to use the word "Aesthetics," signifying the science of sensible (from the senses) knowledge. Thus its objects are the sensible facts, its laws are universal among all the arts, and it is an independent science which gives rules for knowing sensibly and which is occupied with the perfection of sensible knowledge — which is beauty. Thus taste is the judgment of sensible and imaginative representations.

At the same time the English writers on aesthetics were concerned with wit, genius, taste, fancy and imagination; these writers and others contributed to the summary of 18th century thought by Immanuel Kant in his *Critique of Judgment,* in which he laid the basis for 19th century aesthetic theory. Burke made the point that the "origin of our ideas of the sublime and the beautiful was not in differing characteristics of the object, but in a basic difference in the experience of the observer — the difference he marks by distinguishing between *pleasure* and *delight.*" Shaftsbury defined taste as "a sense or instinct of the beautiful, of order and proportion, identical with the moral sense and with its 'preconceptions' anticipating the recognition of reason." Francis Hutcheson called it "the internal sense of beauty, which lies somewhere between sensuality and rationality and is occupied with discussing unity in variety, concord in multiplicity, and the true, the good, and the beautiful in their substantial identity."

In 1757 David Hume published four dissertations, one of which was entitled "Of the Standard of Taste," a critical comment on the people of his day. In it, Hume discusses taste as a concept that only a few people have, but which people pretend to have by agreeing with those who do have it. Thus there is more variety of taste in reality than in appearance. Variation in taste is caused by the fact that "some particular forms or qualities, from the original structure of the internal fabric, are calculated to please, and others displease."

A fine taste occurs when the " . . . organs are so fine as to allow nothing to escape them, and yet so exact that they perceive every ingredient." There are several guides to preserving and building one's taste, according to Hume. One needs to study a work of art many times, as it is not possible to comprehend all about art on the first experience with it. Also it is necessary to make many comparisons, especially of different species of beauty. One should keep one's mind free from prejudice, as it is destructive of sound judgment. And, finally, reason is necessary to good taste.

Hume gives several principles of art which can be considered guidelines by which to decide if a work of art is in good taste, and has beauty. First, there should be a mutual relation and correspondence between the different parts. Secondly, a work of art should be judged according to how far the means at hand are used to reach the certain end or purpose of the particular art object, since all art has a purpose. Thirdly, a work of art must be observed according to its beauties of design and reasoning, and finally, the art object must show clearness of conception, exactness of distinction, and vivacity of apprehension.

Alexander Gerard, in an "Essay on Taste" (1759), defines taste as not just nature or art, but as a combination of the natural powers of the mind aided by the proper culture. He states that taste and imagination are related, for imagination is those internal senses from which taste is formed. Imagination is the middle level between bodily senses, and rational and moral faculties. Taste can proceed either from operations of the imagination or from the general laws of sensation. Thus taste, according to Gerard, is a kind of sensation, as it supplies simple perceptions, and therefore acquaints one with the forms and inherent qualities of external things, and also with the nature of one's own powers and operations.

In general these comments on taste accepted the classical viewpoint that beauty is a universal and divine quality. The philosophers concentrated their attention on trying to understand the basis of a judgment of taste, in an attempt to understand why there was a variety of taste and why some people recognized the beautiful and others didn't.

Immanuel Kant

At this point we turn to Immanual Kant. His importance in philosophy as well as in aesthetics cannot be denied, no philosophers writing on aesthetics following him have been able to write independently of him. They have either supported his ideas or criticized them, unless they were ignorant of him. Kant's importance in aesthetic theory is based on his discovery that aesthetic beauty had to be disinterested, i.e. existing for no other reason than for mere contemplation. "As against the utilitarians he showed that the beautiful pleases 'without concepts;' and further, against both, that it has 'the form of purposiveness' without 'representation of a purpose;' and, against the hedonists, that it is 'the object of a universal pleasure.'"

In the *Critique of Judgment*, 1790, Kant examines the judgment of taste and the judgment of knowledge. The judgment of taste is aesthetic, not scientific; it is based on subjective ideas. It has two characteristics: the judgment of taste is disinterested, and, although subjective, it is universal.

> . . . we look upon beauty as though it were objective and possessed of a character of its own, and as though our aesthetic judgments might be true or false. Yet beauty, unlike truth and goodness, is not objective in the sense of being susceptible to analysis and proof. No intellectual criterion of beauty can be found and judgments of taste cannot be tested according to objective standards. We cannot approach a work of art with a clear idea in mind of what constitutes beauty and measure it in terms of this idea, for beauty does not lend itself to such conceptual treatment.

Kant felt that the aesthetic experience was unique. It seemed to be "the feeling of purposiveness without the idea of purpose . . . the awareness of finality . . . without an intellectual realization of what was aimed at . . . ."

Thus Kant was able to define taste as the "faculty of estimating an object or a type of idea in respect to satisfaction or dissatisfaction without any interest. The object of such satisfaction is called *beautiful.*" But in his concept of taste there is a paradox. Beauty is subjective, therefore individual, and yet taste is universally accepted, and reveals that beauty is the same for all. Kant proceeds to explain the paradox in two ways. First, in terms of man's faculties of cognition:

> The faculty of imagination and the faculty of understanding cooperate to produce intelligent perception. In the aesthetic experience these same faculties are aroused by the object called beautiful to a more harmonious and complete activity than is occasioned by ordinary objects. The feeling of this greater and unexpected harmony is aesthetic pleasure. And, since all men's cognitive faculties are essentially alike, what gives me aesthetic enjoyment may be expected to do the same for others.

Second, the metaphysical solution answers the question "How are we to interpret the beauty of nature and the creations of artistic genius?" Kant answers:

> Genius is the vehicle of a supra-individual force whose comings and goings the artist himself can only partially control. Works of art are phenomenal expressions of the noumenal realm of value. Beauty, like goodness, is born in mysterious fashion, and its discovery by genius is not to be explained solely in terms of psychological and physical antecedents. It is created; yet, not, like goodness, by an act of will and through the agency of reason, but rather through the spontaneous activity of our noumenal nature. And since all genuine works of art are perfect and complete, they may well be regarded as the most adequate expressions of noumenal value which the phenomenal world affords.

Therefore taste can be universal and communicable, for "may it not be the super-sensible or noumenal in each of us which, thought in most cases too feeble to produce great art, yet makes possible our apprehension and enjoyment of the beauty which genius has created?" This idea that the aesthetic experience for creator and observer is really different degrees of the same thing will occur in later writers.

George Hegel

Following Kant, aesthetics of the 19th century became very idealistic. Hegel built an idealistic system in which art was a necessity, although it was subordinate to philosophy.

Hegel, starting with criticisms of Kant's work, arrived at a complete system of his own. His system, based on the evolutionary process of thinking, which starts with a concept (hypothesis), opposes it with its contradictory concept (antithesis), and then studies the two ideas until the synthesis is reached, in which the two concepts are united into a third concept. Thus, starting with the hypothesis of Being and the antithesis of Nothing, resulting in the synthesis of Becoming, Hegel eventually arrives at his concept of the Absolute Idea. The Absolute Idea can be defined as the "source of motion in experience," and as "the hidden form that seeks to obtain full realization in the matter of experience;" it can be compared to the idea of the little acorn growing into the big oak tree, revealing various aspects of itself as it grows, until it finally reached its full appearance in the oak tree — i.e. the Absolute Idea. Art becomes an important instrument to give us insight into the nature of the Absolute Idea. The beautiful, then, is that which "designates the presence of a certain kind of relationship which the artist has caused to appear in his work. He is able to bring sounds, words, or colors together in such a unique fashion that a certain highly organized and original relationship makes its appearance to the artist and the observer."

> Science describes what nature is; the artist seeks to present what nature is a sign of. The scientist describes mankind; the artist depicts what mankind is trying to become. For this reason the aim of the artist is never one of imitation of existential entities. Art, according to Hegel, is superior to nature. It tries to indicate the goals at which nature is aiming . . . In short, the artist tries to show men what kind of man would be the fullest expression of the Idea.

Hegel arrives at the conclusion that the best subject for art is mankind through a process of narrowing down the ideal moments or events which happen in the world, from the right world conditions, the right people and situations, arriving at the conflicts between society and man, and even more specifically, the conflicts man has within himself during which the ideal action or events can happen. An ideal action is characterized by the need for intelligence, forethought, and moral resolution. Thus, "art seeks to depict the Idea. But since it cannot do this in conceptual form, it employs images and symbols. But what is to be imaged and symbolized?" Hegel's answer is that these conflicts between man and society and man within himself, "which concern the most fundamental issues of life and death, right and wrong, good and bad, . . . are the supreme motive forces of art."

Thus art is justified and necessary in Hegel's system, and furthermore, the arts can be classified as to which ones are better than others. Hegel feels that music is better than architecture, sculpture, and painting, but poetry is better than music. Music can arouse very subtle and varied emotions which are not specific but which relate to the abstract life-force. Music can provide the emotional reaction that accompanies ideal events, but is not as high an art as poetry because poetry provides both the emotions and the situations of ideal events. Music is devoid of all but aesthetic appeal, and music takes place in time, and provides a sense of unification in time. It is this unity which is the key to the sense of fulfillment in a composition. But, Hegel avoids, or cannot define what gives beauty to music and what it is that men judge the value of music upon, "As in all the arts, the musical genius supplies the crucial unknown element that results in the highest kind of music."

One other thing about Hegel's philosophy is important in a study on taste. Music expresses the ideal events through style. Hegel recognized that the laws of art are not as strict and objective as the laws of the various sciences are. Therefore, they can change, and do, for as the mind evolves (Hegel believed in an evolutionary process, not a cyclical one), the kind of enjoyment one has also changes. Therefore changes in consonance and dissonance, in harmonic functions and in tonal relations can and do occur, within general formal considerations.

Arthur Schopenhauer

Arthur Schopenhauer, the philsopher well-known for his pessimistic philosphy, in an essay on criticism consider taste the discovery of what is right aesthetically, apart from the guidance of any rule. Taste could be called the "aesthetic sense."

> The perceptive critical taste is, so to speak, the female analogue to the male quality of productive talent or genius. Not capable of *beggeting* great work itself it consists in a capacity of *reception*, that is to say, of recognizing as such what is right, fit, beautiful, or the reverse; in other words, of discriminating the good from the bad, of discovering and appreciating the one and condemning the other.

He makes the point that critics should not try to simply find fault in works of art, but should find the qualities which excel. The standard for judging genius should be "the height to which it is able to soar when it is in the proper mood and finds a fitting occasion." Schopenhauer's explanation for why masterpieces of several generations are recognized as great, but those of contemporary times are misunderstood and judged usually wrong, is that there is a lack of critical insight. Generally, he is opposed to critics, and makes these remarks to show that there is no such thing as the critical faculty. "It is a *rara avis;* almost as rare, indeed, as the phoenix, which appears only once in five hundred years."

Other post-Kantian philosophers departed from the idealistic philosophy also, and diffused into a variety of attempts of reviving hedonistic and utilitarian aesthetics (ignoring Kant), or basing aesthetics on empirical science. The best thoughts in the latter part of the 19th century came from writers specifically in certain artistic fields, such as Hanslick in Music.

Benedetto Croce

In the first part of the 20th century speculative thinking arose about the union between aesthetics and the philosophy of language. Benedetto Croce is the best example of this attempt.

Croce opens his *Aesthetic* with this statement:

> Human knowledge has two forms: it is either intuitive knowledge or logical knowledge; knowledge obtained through the imagination or knowledge obtained through the intellect; knowledge of the individual or knowledge of the universal; of individual things or of the relations between them: it is, in fact, productive either of images or of concepts.

He goes on to say that intuitive knowledge is independent of intellectual knowledge; and the result of art work is intuitive knowledge, while the result of a philosophical dissertation is a concept. Intuition is defined as this:

> Intuitive knowledge is expressive knowledge, independent and autonomous in respect to intellectual function; indifferent to discriminations, posterior and empirical, to reality and to unreality, to formations and perceptions of space and time, even when posterior: intuition or representation is distinguished as form from what is felt and suffered, from the flux or wave of sensation, or from psychic material; and this form, this taking possession of, is expression. To have an intuition is to express. It is nothing else (nothing more, but nothing less) than *to express.*

And so, Croce defines art as the "expression of impressions; . . . every expression is a unique expression . . . Expression is a synthesis of the various, the multiple, in one. In art, impressions are synthesized into expressions.

> By elaborating his impressions, man *frees* himself from them. By objectifying them, he removes them from him and makes himself their superior. The liberating and purifying function of art is another aspect and another formula of its character of activity. Activity is the deliverer, just because it drives away passivity.

When Croce considers taste, and the reproduction of art, he agrees with Kant's idea and that:

> The judicial activity, which criticizes and recognizes the beautiful, is identical with that which produces it. The

> only difference lies in the diversity of circumstances, since in the one case it is a question of aesthetic production, in the other of reproduction. The judicial activity is called *taste;* the productive activity is called *genius*: genius and taste are therefore substantially *identical.*

When the artist has created something beautiful, it is beautiful because it has triumphantly solved the aesthic problem. Ugliness, then, is the aesthetic activity which does not overcome the obstacle. For a person to judge the beautiful creation it is necessary for him to start from the artist's point of view and work through the problem like the artist did, and overcome the obstacle. Thus taste and genius are identical. Croce does not agree either with the absolutists, who say there is an absolute taste, or with the relativists, who say there is no disputing of tastes. Instead, he feels this:

> The true solution lies in rejecting alike relativism or psychologism, and false absolutism; and in recognizing that the criterion of taste is absolute, but absolute in a different way from that of the intellect, which is developed by reason. The criterion of taste is absolute, with the intuitive absoluteness of the imagination. Thus every act of expressive activity, which is so really, will be recognized as beautiful, and every act in which expressive activity and passivity are found engaged with one another in an unfinished struggle, will be recognized as ugly.

Bernard Bosanquet

Another 20th century philosopher, Bernard Bosanquet also feels that the aesthetic attitude of the spectator is "a faint analogue of the creative rapture of the artist," just as Croce says that genius and taste are identical. But Bosanquet believes that the object for contemplation must be present before beauty can be felt, contrary to Croce's idea that beauty is in the mind. Bosanquet calls the aesthetic attitude an "attitude in which we imaginatively contemplate an object, being able in that way to live in it as an embodiment of our feeling." However, his idea of contemplation is not passive, but it includes a creative element, and thus is an attitude of expression.

Bosanquet's comments on taste imply that he doesn't consider taste to be aesthetic judgment, but instead a social phenomenon. He calls taste a tradition "not altogether wholesome" and suggests that it is a superficial judgment of how things go together. The judgment of taste is not an example of the aesthetic attitude, although an observer can have the aesthetic attitude. Acually, Bosanquet is still a classicist, for he does believe in an aesthetic judgment of beauty, giving beauty an eternal quality. His use of the word taste reveals a romantic problem in which taste is used commonly as a superficial word, and is also used by philosophers to mean an aesthetic judgment of beauty. Generally, the latter sense of the word is the way it is used in this paper, unless clarifying statements accompany it.

Bosanquet also speaks to the question of why artists create with different materials:

> The feeling for the medium, the sense of what can rightly be done in it only or better than in anything else, and the charm and fascination of doing it so — these, I take it, are the real clue to the fundamental question of aesthetics . . . "How feeling and its body are created adequate to each other."

He says that "the ideal of every art must be revealed . . . in terms of the art itself." Thus art is the "heightened expression of character and individuality."

In considering the question of ugliness, Bosanquet again compares with Croce. He considers true ugliness to be "conscious attempts at beautiful expression . . . the region of insincere and affected art." A summary of his philosophy is best represented by these words: "The whole world of beauty . . . is the individual operation of a single impulse, the same in spectator and creative artist, and best discerned when we penetrate the heart of strength and greatness under the veil of commonplace destiny or tragic collision."

The Concept of Taste

Now we can turn our attention to the field of music, discussing it before we go into the general concept of *taste*, as most musical "philosophers" follow the classical tradition of thought. The concept of *taste* as a subject in itself is a result of the sociological approach of the 20th century.

Marion Bauer's article in *The International Cyclopedia of Music and Musicians*. provides us with an historical review of taste as a sociological phenomenon. This will only be a general review of the trends of musical taste throughout its history. The history of taste is another paper topic and can't be treated thoroughly here. Such an historical review, though, is valuable for the perspective it gives us in viewing the taste of our own times, making us realize its changeability. The origin of music, in primitive times, started with the fulfillment of the utilitarian needs of the people, of their sense of mimicry and instinct for reproduction. Psychically, this led to their reproduction of thoughts, feelings, spiritual force, "giving rein to his imagination, and need for emotional expression through Art."

During the Greek and Roman time much art was produced, although there was probably no aesthetic consciousness (as Chambers pointed out above). In the Middle Ages no aesthetic consciousness existed, as beauty was created for the glory of God, and was considered a skill. The Renaissance affected music as it affected all art; the art object and the beautiful were joined, and artists, patrons, observers, and critics came into being. The *Nuove Musiche* of Caccini and his contemporaries brought music into the drawing-rooms. This revival resulted eventually in Classicism. "With the perfection of instruments and the development of instrumental forms, the aesthetics of the 'Classic Era' was also formulated."

The Musical Romanticism was a reaction against Haydn, Mozart, and early Beethoven, resulting in an aesthetic change. For the first time in art, man became aware of his own individuality.

> Of his need to express his emotions, of his relation to other individuals, of his growing love for nature, of the social changes, and of revolt against artificiality and conventionality. His urge to express this awakened self-consciousness led to the breaking down of the clean-cut boundaries between the arts. Music attempted to become more literary and pictorial.

As a result of this aesthetic change, program music and national styles evolved. Wagner was a super-Romanticist. He tried to "solve his aesthetic problems through complete freedom of self-expression attained by a fusion of all the arts." His theories were not successful.

Impressionism followed Romanticism, led by Debussy. Aesthetically:

> A new correlation between the arts was effected in which the word, the musical sound, colour, and line, were bent to the will of the writers, musicians, and painters, in a new interpretation of beauty; in a freedom from confining regulations; in an attempt to avoid direct representation and to substitute the artist's impression: in a blending of the arts that would break down the boundaries that separated them and would reveal their mystery.

Today could be considered a mechanistic age, in which "man finds beauty in the perfection and power of the machine, and in its rhythmic movement, and he respects the mechanical principle." We have left the expression of personal emotion, and replaced it with speculative intellectualism, partly in a reaction to the Romanticism of the last century. The problems in art are those of texture, line, architectural design and tonality, and music is generally clever, not inspired. Marion Bauer concludes the article with a lack of belief in a divine-inspired art.

> It has followed practically the same line as these in having passed from unsophistication to sophistication, from spontaneity to artificiality, from ignorance to intellectuality, from the mystic to the scientific; yet we are building machinery that might fall by its own weight, and upon which the future alone can pronounce final judgment. The present civilization may eventually disintegrate to give way to a new one that must again complete a cycle starting from the primitive state, but with the cumulative consciousness of the past to drive it forward.

Eduard Hanslick

Eduard Hanslick wrote a book on *The Beautiful in Music* in which he sets forth his ideas about beautiful music. This book written in reaction to the Romantic musical tradition, is still popular today, probably because the musicians of today still agree with it. It is worthwhile to discuss in detail, for even though it only approaches taste through a discussion of the nature of beauty, it reveals the standards on which taste should be formed, and has had a great impact on the standards of taste of the 20th century. Hanslick's purpose in writing the book was to dispell the older systems of aesthetics which consider that beauty in music arises from the feelings music aroused, and to put forth his idea that the nature of beauty in music is specifically musical, and consists wholly of sounds artistically combined. The elements of music are combined to express musical ideas; music thus has intrinsic beauty, and is an end in itself. Its essence is sound and motion.

He is critical of old systems which cling to the idea that the aesthetic principles of any art can be deduced from a metaphysical conception of beauty. These old systems generally consider emotion to be the subject matter of music, and consider the aim of music to be exciting emotions. Hanslick refutes both of these statements, and also feels that each individual art can only be understood by studying its technical limits and its inherent nature. Hanslick feels that art doesn't affect our feelings, but affects our imagination, which is the organ of Pure contemplation halfway between feeling and intellect. The imagination is what sparks the feeling and the intellect, not the beauty of the art-object. To prove that there is no direct relation between the music and the feelings aroused by it one simply need look at the fact that different generations have had different taste in music and have had different reactions to the music. But even though their tastes change, the musical merit of the composition remains the same.

Hanslick lays down the conditions of the aesthetic ideal. A work of art consists of a definite conception, its embodiment, and the union of both. Beauty results from the more or less perfect embodiment of the subject. However, it is not possible to embody definite feelings in an indefinite art form such as music. Music is not capable of representing any definite emotion, but it can express ideas of intensity waxing and diminishing, of motion hastening and lingering, etc. As far as feelings are concerned, music can only express their dynamic properties. "Beyond the analogy of motion, and the symbolism of sounds, music possesses no means for fulfilling its alleged mission." And furthermore, "the beautiful in music would not depend on the accurate representation of feelings even if such a representation were possible."

Thus we arrive at the conclusion already stated above, that the nature of beauty in music is specifically musical, and its elements can only combine to represent musical ideas. Hanslick makes it even more clear. "In music there is both meaning and logical sequence, but in a *musical* sense; it is a language we speak and understand, but which we are unable to *translate*." And so to judge whether a composition is beautiful or not we examine the musical elements of it, for a composition is beautiful if its musical structure is beautiful.

This is Hanslick's conception of the beautiful in music. It is not limited to one style; it is beautiful in a musical sense only; it is not merely architectonic, or mere regularity or symmetry, but has originality; it is independent of mathematics; and it is not similar to speech, for sound in music is the end, whereas in speech sound is the means of communication. The qualifications alone show however that Hanslick believes in absolute standards of judging beauty in music — absolute musical standards. He is basically a classicist, for he approaches the subject of taste through a study of beauty, and he does believe that beauty can be recognized by applying absolute standards. And he probably would feel that current opinion about a piece of music was not the final judge of its beauty or greatness.

Twentieth Century Points of View

Other philosophers or musicians have taken the aesthetic approach to taste, generally musical taste, by studying the nature of beauty. Ferruccio Busoni, in his *Sketch of a New Esthetic of Music*, goes back to the idea that music is to set our human emotions going; the values in music are spirit and emotion. He feels however that a program hinders the course of the music, for it has to be free. Music repeats the emotions of life, but with taste and style added. These two qualities distinguish art from life. Obviously he would judge beauty expressively, not musically, in opposition to Hanslick's thesis.

Brian Wibberly, in his book *Music and Religion*, is a classicist — he considers beauty an objective quality. Although beauty to Wibberley is an objective phenomenon, it can only be perceived by a subjective phenomenon; the function of art then is to appeal to this sense of the beautiful. But Wibberley recognizes that music is changing and progressive. Therefore, "music has to be judged not by a hard and fast rule which stands for all time, but by an unstable, fluctuating and variable standard which estimates not only the actual artistic accomplishment, but also the state of the development of the art at the time." To this extent he admits social forces on the creation and observance of music.

Frank Howe, in his book, *Man, Mind and Music*, recognizes beauty as a process. Beauty is not in the object, but is in the eyes of the beholder, or more accurately, it is in the relationship between the beholder and the object, arising from the process of contemplation. The artist's purpose in creating is communication; as he communicates he creates beauty. Howe states it this way:

> The artist, by hypothesis a man of keen sensibility, quick emotion and lively imagination, is impelled to create a work of art by instinct. When the object is made he contemplates it to decide whether it is true to his vision; others contemplate it and find it beautiful. Its beauty serves no ulterior end. It merely enriches life, makes life more val-

uable. And men recognize its nature by intuition, the primary act of the mind with which God has endowed them. Thus it seems to Howe that a thing is beautiful if it communicates what the artist was trying to communicate. This would not refer necessarily to absolute standards of judging art.

Charles T. Smith seems to approach music from a very rationalistic and sociological viewpoint. He considers great music to be "a well-thought-out system of tonal relationships." His conclusions concerning the nature of greatness is that "only by the exercise of reason can great music be composed."

Taste can be interpreted two ways, says Smith: it is arbitrary if it means personal likes or dislikes. It is based on objective standards if it means intelligent discrimination. When he actually considers music, Smith bases judgments on the authority of people he calls the real assessors of greatness, and on the test of time. People in general make only intuitive judgments, but the real assesors of greatness are adjudicators — they understand, but are not involved in the process of creating; they are highly sensitive and intelligent, and are educated through many criticisms and comparison of music; they are moved by the music, but keep their emotions under control. Thus,

> greatness has no supernatural element; that it accrues from the arduous labour of individuals who absorb certain competencies and ideas from their predecessors and construct new syntheses called masterpieces; that an authoritative appraisement of these works is based on a penetrating analysis of the mental experiences they give when compared with an analysis of the experiences received from many other works of their kind.

The specialization trend of modern days has extended itself even to fields of study, with the result that Aesthetics, separate from Philosophy, has come into its own as a course of study. For such a study numerous authors have written textbooks to help illuminate the field, and in these books the concept of taste is recognized and talked about.

DeWitt Parker considers taste a phenomenon that is influenced and formed not only by the form of the art object but also by the expectation or set of mind of the observer. He states what taste is:

> through many experiences of good things I come to form a type or standard of what such thing should be like; and, if any new thing of the kind is presented to me, I cannot be so well pleased with it if it does not conform. The type may never be formulated by me explicitly, yet it will operate none the less.

It is impossible not to compare works of art, and such comparison leads to a formation of taste.

Parker gives three general principles of judgment which apply to all art from the aesthetic viewpoint. There must be complete use of the medium, unique use of the material, and perfect use of the medium to fulfill the artistic purpose of communication of thought or feeling from the creator to the observer. The qualities necessary for fulfilling the artistic purpose are uniqueness, freshness, spontaneity, inner necessity, sense, order, and charm.

These principles of judgment presuppose that art has a purpose with reference to which it can be judged. The beauty of a work of art arises from the fact that it has fulfilled its function and purpose.

After such a clear list of standards, the question arises, Why the chaos in judgment? The answer Parker provides is that not all people are able to make aesthetic judgments, which require practice and education, and so many judgments are made on the basis of authority, out of ignorance, or from a partisan standpoint. But even with aesthetic standards, taste necessarily grows and is not dogmatic, but is experimental and representative of actual artistic purpose.

E. F. Carritt includes in his book on beauty some pointers about taste. He points out that supposedly taste is not disputable but a personal thing, and yet people do dispute about taste and talk about improving it, and they do have different tastes.

Carritt admits that there are objective standards of taste, that there is a common character of beauty in things which can be judged. He explains that the differences in taste result from confused ideas of beauty and from the different backgrounds and experiences of the people, among other things. Thus what someone may call beauty could be familiarity or knowledge.

Harold Lee devotes a chapter to the subject of taste, in which he defines taste as "the expression of preference among aesthetic values." A standard of taste is a measure of preference of aestehtic values.

In popular usage, the term good taste often means a preference based on an historical or cultural judgment of art. Lee refutes this idea as being possible, by arguing that if an historical judgment were the basis of a standard of taste, then change in that taste would result in bad taste. And yet, taste is continually changing; thus history cannot be the basis of a standard of taste.

Instead, taste depends upon a person's sensitiveness to perceptual data, and a standard of taste is built up from this sensitiveness to aesthetic value. Taste must be based on a native physiological sensitivity, which varies in different persons. From this a person perceives according to habit, resulting in a superficial standard of taste based on familiarity. But with practice the powers of perception become more acute, interest is aroused in perceptual aspects of objects for their own sake, and a more advanced standard of taste results. More and more practice leads to the highest standard of taste, in which "the apprehension of values may be greatly enhanced and increased through the accretion of the derived aesthetic values which arise from a thorough acquaintance and knowledge of such a situation as that being contemplated."

Generally, a person who has attained a higher level of taste is not satisfied with the superficial things which satisfy a person with a taste based on habitual preference. But even though a person has reached a high standard of taste, he can never overcome the fact that his taste is, at ground level, based on his native powers of perception.

Lee refutes the idea of absolute standards of beauty when he says that "all genuine judgments of taste are individual," when a judgment of taste is a preferential judgment, not a judgment about an aesthetic value. It is individual, because each person bases his taste on his own perception, but the illusion of universality comes from the fact that higher standards based on more adequate perception are more complete than those based on less. However individual a person's taste is, he can be influenced by other expressed opinion. Therefore, a critic can influence people's tastes, and Lee states that that is exactly his job. Because taste is individual not everyone agrees on it, but it is still possible to analyze taste in light of its development in various persons.

"Highly developed tastes may differ greatly if they are in different historical cultures," specifically because the habits of perception upon which they are based change from culture to culture. Good taste reflects a high degree of sensitivity in a person, and bad taste means a taste which "is not acceptable according to a more developed standard."

Theodore Meyer Greene has a theory of beauty and the standards of judging it — taste — which he presents in his book *The Arts and the Art of Criticism*. He is an objectivist, for he believes that the aesthetic quality is actually characterized in certain objects and is awaiting discovery by aesthetically sensitive observers. He is also a formalist, for he believes that beauty as found in a work of art is only its formal aesthetic quality. Any formal pattern which is intrinsically satisfying has beauty, and any formal pattern which is not satisfying is ugly.

Greene then says that beauty is the proper object of taste, which is a kind of aesthetic sensitivity. A man who has taste can distinguish between formal beauty, formal neutrality, and formal ugliness. Taste is acquired through education, starting with the historical tradition and proceeding to judgment through theorizing and observing, and then testing, revising and discovering theories. The result is a disciplined sensitivity to aesthetic beauty. The role of the man of taste is very important, because "it is the critic and the thoughtful art-lover who 'make' certain objects 'works of art' by deciding that they possess the requisite quality to merit inclusion in this class."

Greene admits that a work of art also should have artistic expressiveness in addition to its formal beauty. He defines a work of art as having such expressiveness when the artist's interpretation is expressed, instead of some utilitarian function. Thus a work of art must have content and meaning in itself, without serving any other purpose.

Sociological and Psychological Points of View

Within the twentieth century the disciplines of sociology and psychology have grown, and the subject of music has received its share of experiments and studies. Generally the psychologists have worked in experiments, proving and disproving hypotheses. The sociologists have examined music as a social phenomenon. Alphons Silberman puts it this way:

> Music is chiefly a social phenomenon: social because it is a human product, and because it is a form of communication between composer, interpreter and listener. If music can be said to have an effect upon the individual in his social life, then this very relationship makes it a social phenomenon.

The psychologists and sociologists have also approached taste from a different standpoint from the philosophers. They treat it directly, considering it a social phenomenon deserving of attention and analysis.

John Mueller is a sociologist who has written extensively on music. In his article on "The Social Nature of Musical Taste" he states his opinion that writers about aesthetics in the philosophical field only concern themselves with the nature of art, and don't add to anyone's understanding of art, even though they might add to their reverence for it. His thesis is to consider the sociology of taste, that is in human behavior, "from the standpoint that music is one of the many forms of human behavior with norms set up by society." He considers the function of music possibly as simply a constructive leisure activity. Beauty is not in the music; it is "a human judgment applied to a great variety of compositions."

Thus standards are very changeable, and yet some principles seem to be quite stable; these are called folkways.

> To many, there has never seemed anything so personal, private, and subjective as one's likes and dislikes. But upon further reflection, it will be obvious that esthetic tastes display a broad consesus; they are codified; they are the foundation of a system of theory, are culturally transmitted through the school, the church, the home, and other social avenues. They are the beneficiaries of an esthetic conscience — analogous to moral conscience — which labels discrepant tastes as wrong, and resists radical intrusion of new codes and systems of taste.

To account for the variability of tastes Mueller again cites the fact that music is a social system and that "art tastes and beauty are firmly rooted in the matrix of time and space and social circumstances . . . among which change and evolution also occur." He disagrees with the idea of progress in music, and admits only change in music, and says that musical tastes are only deep habits of thought.

Mueller admits the difficulty of studying the phenomenon of taste, particularly because it becomes non-rational after it has developed, and because the enjoyment of music and art is a terminal experience and so studies concerning it have to rely on personal and individual responses.

Despite many legitimate tastes (the pluralistic concept of taste), the concept of higher taste remains. It combines the approved masterpieces with the conviction that "'high' and 'good' in the aesthetic world assumes a certain intellectual complexity, a certain seriousness, a certain permanence, in contrast to the transient, the light, and the simple, which are easily comprehended by the unsophisticated . . . In general, any activity or practice which requires training or education for its cultivation tends to be admired 'for its own sake' and held in esteem by society in proportion to the degree of the preparatory tuition and its consequent rarity."

Carl Seashore is very well known for his experiments on music, and for his musical tests. He has set up a psychological way in which to study musical aesthetics. He believes that the aesthetics of music will be built on the basis of experimental analysis and scientific measurement, allowing any theory to be tested. A psychology of music would describe and explain musical experience and behavior, study musical talent and sensory responses to music; trace human drives which crave music and find an outlet in music; examine feelings, emotions and musical thought processes; and trace the development of the musical mind. The other scientific approaches to music — through physics, physiology, and anthropology — can be included under the psychological approach.

Of course Seashore points out that the two main approaches to the study of musical aesthetics have been through philosophy and metaphysics. But he describes the philosophical approach as a "succession of failures" in its efforts to find a single unitary principle to account for the nature and function of beauty. In the metaphysical approach eternal questions have been asked but not answered. But science is now taking over the study of aesthetics and will be in the lead until philosophy improves its constructive and creative criticism.

In another instance Seashore defines taste as "the attitude of the connoisseur in music," which rests on natural talent, even though it is often thought of as an acquired ability. The state of maturity in a person, his training in the art, and his talent are some of the psychological factors determining the likes and dislikes of composers, critics, performers, and listeners. Seashore has this to say about taste:

> The refinement of discriminating taste is one of the highest achievements, but, unfortunately, most of this taste is ill-founded imitation, inadequate and ruinous; yet it plays an important role in the assignment of beauty or ugliness to music.

Nicholas Erneston, in his doctoral dissertation, defines musical taste as the "interaction of one's attitudes toward music, one's preferences for certain types of music, and one's ability to discriminate between what is considered by recognized authorities to be 'correct' and 'incorrect' in music." Taste has several characteristics; it is culturally derived, and is affected by social forces; enjoyment is an important part of taste; and musical training affects musical taste, usually raising it. To establish what the standards of taste are it would be necessary to develop tests to test the various factors of musical taste, such as discrimination, preference, knowledge of composers, and experience in music. This is the current psychological, empirical approach to musical taste.

Paul Farnsworth is another experimenter who has tested musical taste in order to discover its nature. He has made numerous tests to find out whether taste follows any laws or whether it is whimsy. By various experiments he has proven that taste, not just in music but in all the arts, does follow certain laws.

But Farnsworth refuses to believe that taste is absolute; if such is the case, then what laws does taste follow? His answer is that taste follows the same laws as any normal social phenomenon, resulting in both its changeability (from age to age) and its relative stability in each generation.

He cites some tests which have been devised to test musical taste. Many tests include listening and making a value judgment on what is heard (the Kwalwasser-Dykema test is of this sort). Polling tests are suggested but Farnsworth also notes their limitations. Other ways to test musical taste include studying orchestral programs, record listening, and the preferences of eminent musicians.

A survey of some of the theories about what conditions musical taste is given by Farnsworth. Some feel that psychoanalytic mechanisms determine taste, some base it on natural harmonies, others on reverence for the past, some on musical training, or on subjective qualities or even climactic qualities. This list of theories at least shows that musical tastes has been studied and needs to be studied much more.

An experiment attempting to determine a specific factor about musical taste is representative of what research is doing in this field. Dorothea Blyler tried to examine the musical interests of children in school, realizing that in the process of education "their tastes and interests must be accepted and respected but they must be broadened and refined." Thus she procceded to analyze the song choices of children in grades two to six, first setting up four hypotheses which she wanted to test. These were: there would be common factors in the songs the children preferred; there would also be common factors in the songs the children disliked; song choices would be influenced by the words of the songs, corresponding to the different maturation levels of the children; and boys' choices would be different from girls' choices. By questioning 9007 children, some individually but all with a questionnaire, she made the following conclusions: folk songs don't hold a greater attraction over other songs. Song choices are definitely influenced by their texts, and these choices show different tendencies in the different grades, indicating the influence of maturation level. However, boys' and girls' reactions did not differ greatly. The songs that were liked did have common factors, as did the songs that were disliked. And, generally, the songs that were liked were of a consistently higher quality than the songs that were disliked. The preferred songs had more expressive melodies, words which made sense, varied accompaniments with interesting harmonies, and good dynamic variations. Only in the sixth grade did the children reject some good songs along with bad ones. Thus she did make some findings about children's preferences which should be interesting to music teachers.

Relationship Between Music Education and Musical Taste

After a review of the philosophical, sociological, and psychological approaches to the subject of taste and musical taste, it is time to turn our attention to the relationship between music education and musical taste. Most music educators would agree that public school music education should have some effect on general musical taste. Raising the level of musical taste is generally incorporated into the purpose of music education, and specifically into the purpose of music appreciation courses.

Harry S. Broudy calls general education "the cultivation of capacities for realizing values." Music fits into this idea in the following manner:

> If we believe that childhood songs and primitive chants are as good as Bach's chorales and Brahm's symphonies, there is no point in including music in *general* education; it would be a dubious luxury for a peculiar few. If we believe otherwise, it is because we are convinced that the individual in responding to the Bach chorale is exercising his human capacities at a higher level than is the child of the savage, and to that extent he is 'better' than they are, that is, further along the road of self-perfection.

As far as taste is concerned, Broudy recognizes the connoisseur of an art as the only reliable source of standards. "For the expert, the better is that which is more subtle, more complicated, less obvious, whether the music is serious or popular." And so, in answering the question of whether we can shape preferences, Broudy sees a moral dilemma. He thinks it necessary that the music teacher be a connoisseur of the art, and be chosen on the basis of his competence. Only then is it right to impose taste on others.

> To be sure, one starts with the taste of others, but as knowledge and skill grow, freedom to experiment, to be creative, to judge, and to choose and to reject also grow. The goal of the realist is an informed taste rather than eccentric taste, and the former is as genuine and individual as is the latter.

Max Schoen is a formalist in his concept of beauty — he feels that beauty is "the feeling for form as form." And yet, in stating his viewpoint that we need a philosophy of values in music education he includes the idea that a middle course should be taken by the music teacher between the subjective and objective views on value in music, to broaden the opportunity for the child to experience music aesthetically.

Schoen suggests that the present ways of presenting music for education — familiarity, analysis, and extra-musical interpretation — are not adequate ways to help the child have the highest aesthetic experience possible. Instead he feels that the only way to develop each child's native sensitivity to its point of highest aesthetic experience is simply to provide listening experiences for the child, without extra-musical comments which may intrude on the child's experience. This procedure best relates to Schoen's general purpose for education which he calls the bringing forth and advancing of the native powers that every person possesses to individual degrees.

Elliott Carter, in an article on music as a liberal art, discusses a method of learning about music so that an inter-related understanding of music with other arts, with literature, with history and with science is a result. Thus music is approached through listening, philosophical discussions, laboratory experiments, and lectures. He feels that this approach achieves the basic purpose of teaching music appreciation: it increases the student's understanding and enjoyment of music, resulting in a higher standard of taste among the general public and a greater appreciation of music by more people.

Hans Tischler also applies himself to the best method of teaching music appreciation in order to raise the standards of public taste. His chief objective for music appreciation is:

> the appreciation of music, which we have analyzed roughly into five ingredients, to wit: enjoyment, perception of the technical elements, knowledge of the various types of musical works, insight into the social meanings of music, and grasp of styles both as they evolve through history and as they emanate from individual geniuses.

His method of reaching this goal is to adopt a multi-principle approach, by dividing a music course into several units, each based on a principle, with all the principles being related to each other.

Tischler also emphasizes the use of analysis of music, suggesting that its purpose is "to guide the reader toward a better understanding of what he hears and towards applying what he has already learned as well as to derive some new learning from his listening experience. Thus Tischler feels that a music appreciation course should spend its time mostly listening to music, instead of learning about things concerned with music, and it should approach music through various principles of study instead of just one, such as style.

Johan Grolle places a great responsibility on the shoulders of music teachers, who he feels need to impress and educate the young musicians of today in a high standard of taste, because "music as a social force must meet the needs and the possibilities for response of the masses who, as yet, are so dilettante in their approaches and responses to music." And, in helping the youth learn about music, teachers must not only sustain the past traditions but must keep up with contemporary music and present it to the student.

Grolle lists several influences of modern life which interfere with the intuitive response of the musical student. He feels that the general musical taste of the parents is too emotional a response to music. Also, in the public schools, music is a mass social activity, and the program is insufficient to do the job. Besides, the emphasis on the academic leaves little room for music to be taught. But although the job is difficult, it must be done, for music is a part of life and of behavior.

A group of writers have combined efforts to study the appreciation of art and its place in education. The questions which they raise are these: What are the objectives of teaching art appreciation? How much deference should be paid to the tastes of the students? How valid are the judgments concerning "masterpieces" which will be presented to the students?

In answer to these questions, they suggest that the objectives of teaching appreciation are the transmission of social heritage, the training of perception of art by developing the habit of spontaneous analysis, and the recognition of the inter-relation of knowledge, understanding, and appreciation. They take a sociological point of view about art, and define beauty not as a quality of the mind or of the object, but as the product of the relationship between the object and the past experiences of the individual observer. Thus, judgments of masterpieces must be made with this criterion in mind.

They recognize that there is much variety in taste and in standards of beauty, because everyone takes different backgrounds and experiences to the work of art. Finally, they feel that appreciation of art cannot be taught directly, but the perceptions and the experiences which will lead to appreciation must be acquired.

Bennett Reimer feels that Leonard Meyer's theory on the value and greatness in music is important to music education. Thus he briefly summarizes Meyer's theory, by saying that besides the value-determining technical criteria, value in a piece of music is dependent upon the music setting up tendencies toward a goal, and then inhibiting the attainment of that goal, or in other words, creating problems which have to be overcome before the goal can be reached, which it finally does. "The greatest works, then, are those which combine value of the highest order with the most profound content. 'Excellence' in a piece of music depends on syntactical elements, while 'greatness' includes considerations of content." Reimer sees the job of music education as teaching and explaining the syntactical (technical) nature of music, in order to provide the student with the means of apprehending and evaluating musical excellence. As for greatness in music, which arises from a consideration of content, Meyer considers music great only when it illuminates and makes conscious to the listener the ultimate uncertainties of life. Reimer has not yet been able to formulate ideas on how music education can teach this, since it is essentially a matter of religious education — the ultimate uncertainties of life being a religious problem.

Documentation of the low taste of the public for music is easily provided for music educators who feel that their object is to raise the public's musical standards. I will give here two comments by people who are indirectly related to the musical field, i.e., they are not educators or musicians.

Sigmund Spaeth wrote a short essay on musical taste, not bothering to start with a definition of taste but considering it a social phenomenon of which he merely describes the state. The fewest number of people are able, upon hearing an unfamiliar work, to express a definite opinion about it. The majority of the American public is satisfied with light classical tunes and jazz, and there are millions who "take their music in a perpetual state of comfortable coma or luscious lethargy." Spaeth considers this the line of least resistance, and asks this question of the public: "May it not be possible for us gradually to respond to music somewhat as we respond to sports, acquiring at least the minimum information as to what it is all about?"

Goddard Lieberson, a representative of a top recording company, had some comments to make to a MTNA meeting concerning the public. He quotes William Hazlett's comment about the public, stating that it " . . . is so in awe of its own opinion, that it never dares to form any, but catches up the first idle rumor, lest it should be behind hand in its judgment . . . The public ear is at the mercy of the first impudent pretender who chooses to fill it with noisy assertions or false surmises or secret whispers." Lieberson challenges this remark, and feels that it is wrong to blame the public for the low standards of taste; after all, we are all part of the public. He feels that people knowledgeable about music who could help improve the public taste don't always do their share.

His theory about how taste operates is that many listeners start out enjoying Kern, Gershwin, and others. They then find elements in Ravel, Debussy, or Stravinsky that they like, and so their taste moves up a little. This music introduces them to some elements of Brahms.

Summary

From this summary of opinions on the concept of taste, the complexity of approaches towards it, the different meanings of it, the various natures assigned to it point out that it has been used as an easy word to cover up a difficult subject. Of the two basic ways of interpreting taste, the classical and the sociological, I will have to concede to the sociological viewpoint that taste, and standards of taste, seem to be a social phenomena, governed by folkway mores, normally stable, but changing from generation to generation. Certainly this is the predominant concept of taste that is understood today. But the opinion of the classical school cannot be thrown away completely and certainly not without much thought. I find myself unable to give up the opinion that there are some qualities of beauty in art that are universal, even if these qualities are simply the formal structural principles that the Greeks considered beauty.

Certainly much more remains to be said on the subject of music education and the formation of taste, and many more investigations can be made concerning the relationship of the two. As a music educator, I find myself resolving the area of investigation down to three parts: convincing myself that music is an essential part of every person's life; discovering the ways in which musical taste and music education are and can be related; and then finding the method of teaching music which will fulfill the objective discovered from the first two problems. I think this is a crucial problem in music education which must be tackled.

FOOTNOTES

1. John H. Mueller. "Music and Education: A Sociological Approach," *Basic Concepts in Music Education*, National Society of Secondary Education Yearbook (Chicago: University of Chicago Press, 1958)
2. Benedetto Croce, *Aesthetic as Science of Expression and General Linguistic*, trans. Douglas Ainslie (London: MacMillan and Company Ltd., 1909) 252
3. *Ibid.*, 253
4. Bernard Bosanquet, *A History of Aesthetics* (London: George Allen & Unwin, Ltd., 1949) 17-18
5. *Ibid.*, 18
6. *Ibid.*
7. *Ibid.*, 58
8. *Ibid.*, *43ff*
9. *Ibid.*, 114
10. *Ibid.*, 113
11. Frank P. Chambers, *Perception, Understanding and Society* (London: Sidgwick and Jackson, 1961) 178
12. *Ibid.*, 187
13. *Ibid.*, 188
14. Katherine Gilbert and Helmut Kuhn, *A History of Esthetics* (Bloomington: Indiana University Press, 1953) 166
15. "Aesthetics," Encyclopedia Britannica, 1947 ed., Vol. I
16. Croce, 277-281
17. Croce, 275
18. Alexander Sesonske (ed.), *What is Art? Aesthetic Theory from Plato to Tolstoy* (New York: Oxford University Press, 1965) xv
19. Croce, 272
20. *Ibid.*
21. Sesonske, 157
22. *Ibid.*, 158
23. Alexander Gerard, "Essay on Taste," *What is Art? Aesthetic Theory from Plato to Tolstoy*, ed. Alexander Sesonske (New York: Oxford University Press, 1965)
24. "Aesthetics," *Encyclopedia Britannica*, 1947 ed., Vol. I.
25. Theodore Meyer Green (ed.), *Kant Selections* (New York: Chas. Scribner's Sons, 1957) lxii-lxiii.
26. *Ibid.*, lxiii.
27. E. F. Carritt, (ed.), *Philosophies of Beauty* (Oxford: Clarendon Press, 1931) 110.
28. *Greene*, lxiii-lxiv.
29. *Ibid.*, *lxiv-lxv*
30. *Ibid.*, lxv
31. Jack Kaminsky, *Hegel on Art* (New York: State University of New York, 1962) 19
32. *Ibid.*, 30
33. *Ibid.*, 30-31
34. *Ibid.*, 38
35. *Ibid.*
36. *Ibid.*, 125
37. Arthur Schopenhauer, *The Art of Literature*, trans. T. Bailey Saunders (London: George Allen & Unwin, Ltd., 1926) 87
38. *Ibid.*, 88
39. *Ibid.*, 87
40. "Aesthetics," *Encyclopedia Britannica*, 1947 ed. Vol. I, 271
41. Croce, I.
42. *Ibid.*, 18-19
43. *Ibid.*, 35
44. *Ibid.*, 197-98
45. *Ibid.*, 195
46. *Ibid.*, 201-202
47. *Bosanquet*, 35
48. *Ibid.*, 29-30
49. *Ibid.*, 31
50. *Ibid.*, 60-61

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51. *Ibid.*, 63

52. *Ibid.*, 106

53. *Ibid.*

54. *Ibid.*, 111-12

55. Marion Bauer, "Aesthetics in Music," *The International Cyclopedia of Music and Musicians*, ed. Oscar Thompson (New York: Dodd, Mead & Co., 1964) 23

56. *Ibid.*

57. *Ibid.*

58. *Ibid.*

59. *Ibid.* 24

60. *Ibid.*

61. *Ibid.*

62. *Ibid.*

63. Eduard Hanslick, *The Beautiful in Music*, trans. Gustav Cohen (London: Novello & Company, Ltd., 1891)

64. *Ibid.*, 35-36

65. *Ibid.*, 40

66. *Ibid.*, 56

67. *Ibid.*, 71

68. Ferruccio Busoni, *Sketch of a New Esthetic of Music, trans.* Dr. Thomas Baker (New York: G. Schirmer, 1911)

69. Brian Wibberley, *Music and Religion* (London: The Epworth Press, 1934), 224-5

70. Frank Howe, *Man, Mind and Music* (London: Secker & Warburg, (1948), 93

71. *Ibid.*, 98

72. Charles T. Smith, *Music and Reason* (New York: Social Science Publishers, 1948), 105

73. *Ibid.*, 104

74. *Ibid.*, 147

75. DeWitt Parker, *The Principles of Aesthetics* (New York: F. S. Crofts & Company, 1946) 106

76. *Ibid*, 107

77. E. F. Croft, *What is Beauty?* (Oxford: Clarendon Press, 1932)

78. Harold N. Lee, *Perception and Aesthetic Value* (New York: Prentice Hall, Inc., 1938) 123

79. *Ibid.*, 131

80. *Ibid.*, 136

81. *Ibid.*, 139

82. *Ibid.*, 142

83. Theodore Meyer Greene, *The Arts and the Art of Criticism* (Princeton: Princeton University Press, 1947)

84. *Ibid.*, 13

85. Alphons Silberman, *The Sociology of Music* (London: Routledge & Kegan Paul, Ltd., 1963) 38

86. John H. Mueller, "The Social Nature of Musical Taste," *JRME*. IV (Fall 1956), 114

87. Ibid., 120

88. Ibid., 122

89. John H. Mueller, "Music and Education: A Sociological Approach," *Basic Concepts in Music Education*, NSSE Yearbook (Chicago: University of Chicago Press, 1958) 97

90. *Ibid.*, 109

91. Carl E. Seashore, *Psychology of Music* (New York: McGraw-Hill Book Company, Inc., 1938)

92. *Ibid.*, 376

93. Carl E. Seashore, *In Search of Beauty in Music* (New York: The Ronald Press Co., 1947), 185

94. *Ibid.*, 185

95. Nicholas Erneston, "A Study to Determine the Effect of Musical Experience and Mental Ability on the Formulation of Musical Taste," (Ann Arbor: University Microfilms, Inc. 1961)

96. Paul R. Farnsworth, *Musical Taste: Its Measurement and Cultural Nature* (Stanford: Stanford University Press, 1950)

97. Dorothy Blyler. "The Song Choices of Children in the Elementary Grades," *JRME*, VIII (Spring 1960)

98. Harry S. Broudy. "A Relative Philosophy of Music Education," *Basic Concepts in Music Education*, NSSE Yearbook (Chicago: University of Chicago Press, 1958) 76

99. *Ibid.*, 77

100. *Ibid.*, 84

101. *Ibid.*, 86

102. Max Schoen, *The Understanding of Music* (New York: Harper & Brothers, 1945) 39

103. Elliott Carter, "Music as a Liberal Art," *Modern Music* XXII (November- December, 1944)

104. Hans Tischler, "The Teaching of Music Appreciation," *JRME*, VII (Fall 1959) 170

105. *Ibid.*, 172

106. Johan Grolle, "Music as a Need in the Development of Modern Youth." Proceedings of the MTNA, Series 27, 1932.

107. John H. Mueller *et al*, *Studies in Appreciation of Art* (Eugene Oregon: University of Oregon Publication, 1917).

108. Bennett Reimer, "Leonard Meyer's Theory of Value and Greatness in Music," *JRME*, X (Fall, 1962), 94

109. Sigmund Spaeth, *The Importance of Music* (New York: Fleet Publishing Corp., 1963) 34

110. *Ibid.*, 35

111. Goddard Lieberson, "Public Be Damned?" Proceedings of the MTNA, Series 39, 1945, 24

BEST COPY AVAILABLE

BIBLIOGRAPHY

Books

Bosanquet, Bernard. *A History of Aesthetics*. London: George Allen & Unwin, Ltd., 1949.

Bosanquet, Bernard. *Three Lectures on Aesthetic*. London: MacMillan and Company, Ltd., 1915.

Busoni, Ferruccio. *Sketch of a New Esthetic of Music*. trans. Dr. Thomas Baker. New York: G. Schirmer, 1911.

Carritt, E. F. ed. *Philosophies of Beauty*. Oxford: Clarendon Press, 1931.

Carritt, E. F. *What Is Beauty?* Oxford: Clarendon Press, 1932.

Chambers, Frank P. *Perception, Understanding and Society*. London: Sidgwick and Jackson, 1961.

Croce, Benedetto. *Aesthetic as Science of Expression and General Linguistic*. translated by Douglas Ainslie. London: MacMillan and Company, Ltd., 1909.

Farnsworth, Paul R. *Musical Taste. Its Measurement and Cultural Nature*. Stanford: Stanford University Press, 1950.

Gilbert, Katharine and Helmut Kuhn. *A History of Esthetics*. Bloomington: Indiana University Press, 1953.

Greene, Theodore Meyer. ed. *Kant Selections*. New York: Chas. Scribner's Sons, 1957.

Greene, Theodore Meyer. *The Arts and the Art of Criticism*. Princeton: Princeton University Press, 1947.

Hanslick, Eduard. *The Beautiful in Music*. translated by Gustav Cohen. London: Novello & Company, Ltd., 1891.

Howe, Frank. *Man, Mind and Music*. London: Secker & Warburg, 1948.

Kaminsky, Jack. *Hegel on Art*. New York: State University of New York, 1962.

Lee, Harold N. *Perception and Aesthetic Value*. New York: Prentice-Hall, Inc., 1938.

Leonhard, Charles and Robert W. House. *Foundations and Principles of Music Education*. New York: McGraw-Hill Book Co., Inc., 1959.

Mueller, John H., et al. *Studies in Appreciation of Art*. Eugene, Oregon: University of Oregon Publication, 1917.

Parker, DeWitt. *The Principles of Aesthetics*. New York: F. S. Crofts & Co., 1946.

Schoen, Max. *The Psychology of Music*. New York: The Ronald Press, 1940.

Schoen, Max. *The Understanding of Music*. New York: Harper & Brothers, 1945.

Schopenhauer, Arthur. *The Art of Literature*. translated by T. Bailey Saunders. London: George Allen & Unwin, Ltd., 1928.

Seashore, Carl E. *In Search of Beauty in Music*. New York: The Ronald Press Co., 1947.

Seashore, Carl E. *Psychology of Music*. New York: McGraw-Hill Book Co., Inc., 1938.

Sesonske, Alexander. ed. *What Is Art? Aesthetic Theory from Plato to Tolstoy*. New York: Oxford University Press, 1965.

Silberman, Alphons. *The Sociology of Music*. London: Routledge & Kegan Paul, Ltd., 1963.

Smith, Charles T. *Music and Reason*. New York: Social Sciences Publishers, 1948.

Spaeth, Sigmund. *The Importance of Music*. New York: Fleet Publishing Corp., 1963.

Wibberley, Brian. *Music and Religion*. London: The Epworth Press, 1934.

Articles and Dissertations

"Aesthetics." *Encyclopedia Britannica*. Vol. I, 1947.

Bauer, Marion. "Aesthetics in Music," The International Cyclopedia of Music and Musicians. New York: Dodd, Mead & Company, 1964.

Blyler, Dorothea. "The Song Choices of Children in the Elementary Grades," *Journal of Research in Music Education*, VIII. Spring, 1960.

Broudy, Harry S. "A Relative Philosophy of Music Education," *Basic Concepts in Music Education*, National Society of Secondary Education Yearbook. Chicago: University of Chicago Press, 1958.

Carter, Elliott. "Music as a Liberal Art," *Modern Music*, XXII, November-December, 1944.

Erneston, Nicholas. "A Study to Determine the Effect of Musical Experience and Mental Ability on the Formulation of Musical Taste." Ann Arbor: University Microfilms, Inc., 1961.

Farnsworth, Paul R. "Some Psychological Considerations of Musical Taste," *Proceedings of the Music Teachers National Association*, Series 43, 1951.

Grolle, Johan. "Music as a Need in the Development of Modern Youth," *Proceedings of the Music Teachers National Association, Series* 35, 1940.

Kramer, A. Walter. "The So-Called Musical Public," *Proceedings of the Music Teachers National Association*, Series 27, 1932.

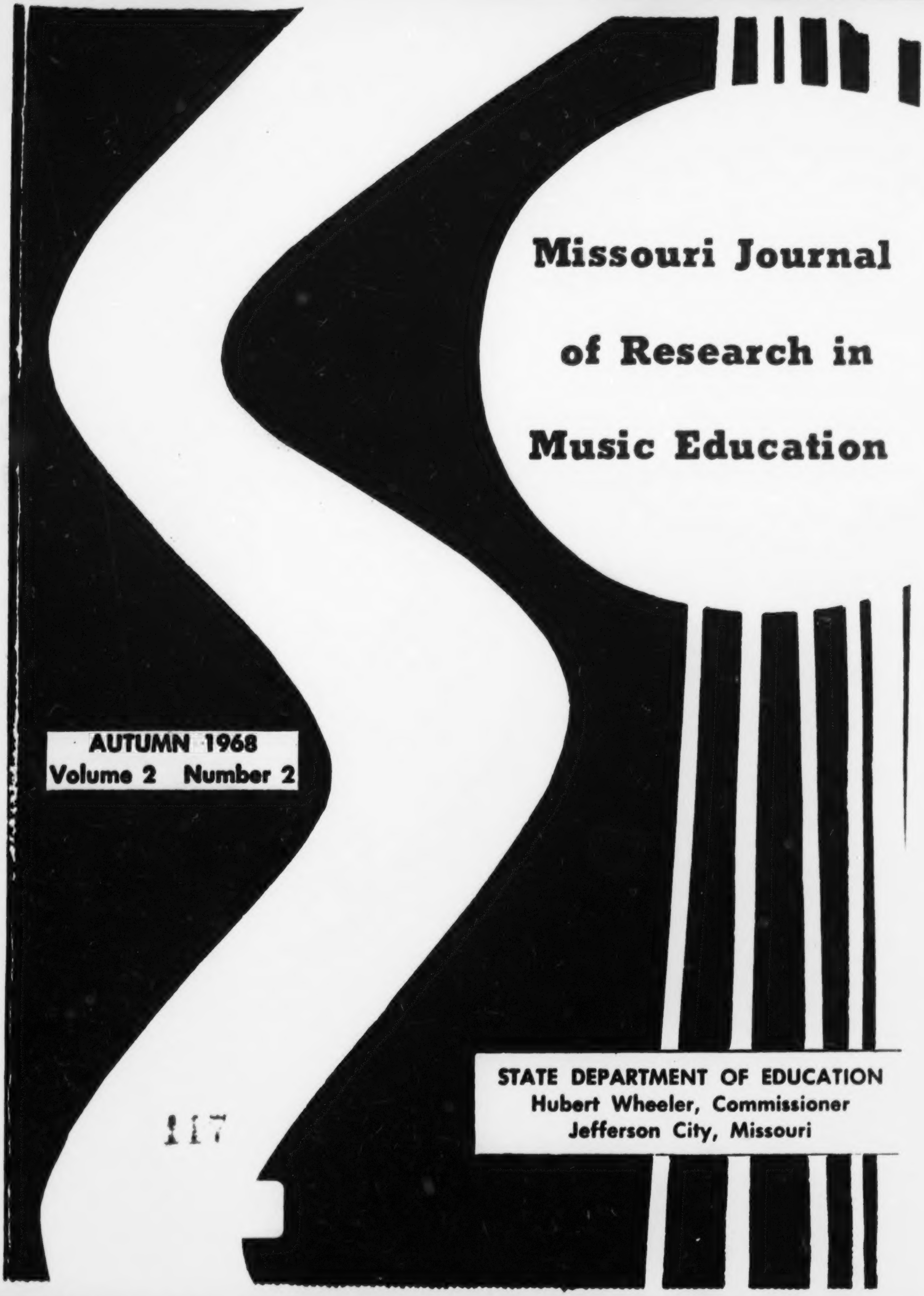
Lieberson, Goddard. "Public Be Damned?" *Proceedings of the Music Teachers National Association*, Series 39, 1945.

Mueller, John H. "Music and Education: A Sociological Approach," *Basic Concepts in Music Education*. National Society of Secondary Education Yearbook. Chicago: University of Chicago Press, 1958.

Mueller, John H. "The Social Nature of Musical Taste," *Journal of Research in Music Education*, IV. Fall, 1956.

Reimer, Bennett. "Leonard Meyer's Theory of Value and Greatness in Music," *Journal of Research in Music Education*, X. Fall, 1962.

Tischler, Hans. "The Teaching of Music Appreciation," *Journal of Research in Music Education*, VII. Fall, 1959.



Missouri Journal of Research in Music Education

AUTUMN 1968
Volume 2 Number 2

STATE DEPARTMENT OF EDUCATION
Hubert Wheeler, Commissioner
Jefferson City, Missouri

MISSOURI JOURNAL OF RESEARCH IN MUSIC EDUCATION

Published by the Missouri State Department of Education

Volume II 1968 Number 2

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N.B. All contributors are advised to keep a copy of any manuscript submitted. The Editorial Committee can not be responsible for loss of manuscripts.

PREFACE

The Missouri Journal of Research in Music Education, published as a Bulletin of the State Department of Education, is devoted to the needs and interests of the school and college music teachers of Missouri and the nation. This issue, Volume II, Number 2, is the seventh to appear in as many years.

The members of the Editorial Committee are grateful to those readers who have written suggestions concerning the content of past issues and request that criticisms and suggestions, always welcome and never unheeded, again be sent to the Editor concerning the content of this issue. We strive for a reasonable balance between music theory, history, philosophy or aesthetics, and pedagogy. It is difficult to judge how successful we are without reader response.

Since this publication is not copyrighted, complete articles or excerpts from articles may be made without securing permission from the editor or the authors. It is requested that credit be given to the Missouri Journal of Research in Music Education.

Copies of this journal are obtainable without charge from the Missouri State Department of Education. — The Editor.

Progress Report on

ACTION RESEARCH PROJECT

in the State of Missouri

Bion McCurry
Chairman, Action Research Committee

Early in 1967, the Executive Board of the Missouri Music Educators Association approved a proposal made by Mr. Donald Anderson, Director of Music, Brentwood Public Schools. The proposal was designed to initiate and encourage research on the part of Missouri school music teachers whereby music education programs in the state and the nation might be strengthened. The proposal was labeled Action Research Project.

A modest appropriation was set aside by the MMEA Executive Board to be awarded as honoraria to those Missouri teachers who had completed an original research project of merit. The amount of each honorarium was to be determined by a committee appointed for this purpose. In addition to an honorarium, the editors of the Journal were to give strong consideration to the publication of the research results.

Five applications for research projects were submitted and accepted for consideration. At the 1968 Spring meeting of the Action Research Commttee, a $200 honorarium was awarded to the director of one completed project. Three other projects nearing completion are to be considered at the committee's Fall meeting.

The recipient of the first honorarium awarded by the Action Research Committee was Mrs. Deanna Marshall, an elementary music teacher in the Eldon R-1 Schools, Eldon, Missouri. Her research project was one in which she designed an innovative music test for lower elementary music students, titled, "Fun with Music." The results of her project will appear in a later issue of the Journal.

The Action Research Committee is most enthusiastic about the interest shown, and the results obtained in this, the initial year of the state project. Action Research will continue to encourage Missouri teachers to submit applications to the Committee for any research project related to music education they may wish to initiate.

NOTES ON MUSICAL TASTE

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Introduction

The development of musical taste is a professed aim of music education. As such, it is mandatory that music educators have an understanding of the term "musical taste."

"Taste," "application," "discrimination," and "preference" all imply the making of judgments, and in this respect they will be considered equivalent in this paper. It is interesting to note that while "appreciation" is the term most frequently used in connection with music education, and "taste" was the most often employed in early research, later studies have favored the use of the word "preference."

These notes are intended to give an overview of some of the writing in the field of musical taste, to point out some conclusions which have been drawn from the research to date, and to suggest implications that these findings may have for Music Education.

The early music critic, Johann Adolf Scheibe (1708-76), on May 14, 1737, in *Der Critische Musickus*[1], Hamburg wrote:

> All the ornaments are written out in full. Therefore his compositions are deprived of beauty, of harmony, and of clarity of melody, since the song is unrecognizable. All voices must work with each other, all with the same weight, so that it is impossible to recognize the principal voice. In short (J. S.) Bach is to music what Lohenstein is to poetry. Their inclination toward bombast led them both from naturalness to artificiality, from sublimity to want of clearness.[2]

In 1791 these remarks appeared in *Chronik von Berlin*:

> What the composer must express is, not an overloaded orchestra, but heart, feeling, and passion. Only as he writes in a great style, only then will his name be given to posterity. Gretry, Monsigny, and Philidor prove this. Mozart in his *Don Giovanni* intended to write something uncommonly, inimitably great. There is no doubt: the uncommon is here, but not the inimitably great! Whim, caprice, ambition but not heart created *Don Giovanni*.[3]

According to a contemporary, in his *Symphony Number Four*, Beethoven:

> . . . is extremely bizarre, and makes himself unintelligible and an object of terror to even a cultivated dilettante.[4]

A Boston newspaper, after a performance of Stravinsky's *Le Sacre du Printemps* in 1924, contained:

> He who could write the Rite of Spring,
> If I be right by right should swing.[5]

Musical tastes change; what is considered in good taste at one time is in poor taste at another, and conversely, as demonstrated by the following comment which appeared in the *Allgemeine musikalische Zeitung in* 1793:

> Mozart was a great genius, but he had no real taste, and little or perhaps no cultivated taste. He missed of course, any effect in his original operas.[6]

The Instability of Musical Taste

The instability of musical taste was attested to in a 1941 study by John H. Mueller and Kate Hevner in which they made a survey and analysis of the programs performed by eleven musical organizations from 1813-1941. They found that during this period musical tastes were never static, and that what was popular in one era, was not so in another.[7]

Over a period of time the listeners themselves change. Their interests, musical habits, expectations, and backgrounds, in terms of which the music apprehended, are ever modified by intervening experiences.[8] Music which is easily grasped, enjoys quick popularity, but this wanes just as swiftly. However, music termed by Mueller and Hevner as highly complex and compact is accepted more slowly, but its decline from favor also takes proportionally longer.

Each piece has an optimum number of repetitions at which the greatest enjoyment takes place. Repetition beyond this peak results in a sharp decline in popularity unless an interval, during which the listeners can forget some of the piece, occurs between performances.[9] Thus relatively familiar and more simple music remains "immortal" only by not being too much alive.[10] It was asserted by Mueller and Hevner that because of this inconstancy of taste, every composer has a life cycle, and the end of his popularity (*i.e.* of his music being considered in good taste) is as inevitable as the beginning.

What is implied in the Mueller and Hevner study had been stated earlier by Mortimer J. Adler in 1929. Adler believed that taste exists only in relation to social norms, and can only be measured in terms of an individual's deviation from the group norm. It was the purpose of an investigation by Adler to discover whether the modal judgment of one group differed from that of another.[11]

In Adler's studies, the subjects listened to several original compositions, each having three variations (distortions). The distortions were:

Dull: "flat-foot," unimaginative. [sic] This version included the original in only the barest outlines.

Sentimental: filled with musical cliches.

Chaotic: This version included certain figures which destroyed the unity of the original. (*e.g.* whole passages omitted, foreign passages inserted, rhythmic structure destroyed, unjustified dissonances.[12]

The subjects heard six sets, each containing an original composition with its three variations in mixed order. The subjects were asked to indicate only the selections of each set that they liked "best" and "least." They were also asked to complete a musical background questionnaire. The scores made by the subjects were compared with the scores made by an "expert" group of nineteen graduate music students.

A second test series was of fundamentally the same design as the first.

Adler made it quite plain that even though these tests used the original version as the basis for scoring, it was not presumed that conformity with the original was necessarily indicative of "good" taste. One group tested was relatively untrained in music, with a predominance of subjects who had never taken music courses in college, did not attend concerts, and did not play any music instruments. The overwhelming preference of this group was for the "sentimental" version. If the members of this group were used as the arbiters of "good" taste, it would be in "bad" taste to prefer the unadulterated or undistorted works of Bach, Beethoven, and Wagner to deliberately "sentimentalized" distortions.

The original version can be said to be superior or "better" if it is (1) the modal preference of a random sampling of the population, or (2) if it is the modal preference of a group of experts.[13] The results of the study by Adler justify, in this case, the assumption that the original version is superior because it is the modal preference of the entire group as well as of the group of experts, with the latter choosing it 90% of the time.

It was also found that if those possessing knowledge of either the composition or of the composer were barred from taking the test, the modal preference of the resultant group would be the "dull" version. Adler conjectured that this was because the dull version was closest to the original, differing in what was omitted, whereas the sentimental and chaotic versions differed from the original through the introduction of "negative" values. Not unexpectedly, Adler inferred that training is an important factor in developing a musical taste which correlates with that of the experts.

An early attempt at the scientific measurement of musical taste was made by M. L. Mohler. A report of his research was written by M. R. Trabue in 1923. According to Trabue, Mohler sought to measure the ability to distinguish the difference between good music and poor music.

Mohler established an absolute scale of musical values (*i.e.* a hierarchy) by a combination of the musical preferences of a group of "experts" and a group of "intelligent adult" laymen.[15] Phonograph recordings of sixteen orchestra selections, original or arranged, were used. The works varied from whole movements of pieces from the classical literature to popular songs.

Four groups of subjects were tested. Two groups were played four sets of records with four records in each set. The other two groups listened to five sets with three records each. The subjects were asked to rate the records in each set as: "best," "next to best," and "poorest." The subjects' preferences were then graded in terms of their correlation with the preferences of the expert-intelligent adult group (*i.e.* the absolute scale).

The previously noted fact that musical taste is not constant can be seen here in retrospect also. In scanning the order into which the "experts"[16] placed the first twelve selections on Mohler's scale, the disparity with what one would assume to be present day preference is striking. The order of preference of the expert group only (excluding the intelligent adult ratings) is as follows:

1	*Intermezzo*	Wolf Ferrari
2	*First Movement of the Unfinished Symphony*	Schubert
3	*Venetian Love Song*	Nevin
4	*Anitra's Dance from the Peer Gynt Suite*	Grieg
5	*Valse, from the ballet music of Faust*	Gounod
6	*Chaconne*	Durand
7	*Largo from the New World Symphony*	Dvorak
8	*Turkish March from the Sonata in A Major*	Mozart
9	*Deer Dance*	Skilton
10	*Triumphal March from Aida*	Verdi
11	*Sparklets*	Walter E. Miles
12	*Introduction to Act III, Lohengrin*	Wagner

(One should take into account the inconsistent quality of recordings of that time, but today's musician finds the ranking almost incredible).

In the results of this test it was noted that the pupils of a school in which the development of music appreciation had been attempted made higher scores, i.e. correlated more closely with the expert-intelligent adult group preferences, than the pupils of schools where little or no such training was available. It was concluded that musical taste is very much susceptible to training, and this has, of course, been amply demonstrated elsewhere.

The object of a study made by F. L. Wells[17] was to measure whether a musical composition evoked the associations denoted by the assigned title, or some other associations. The subjects[18] were given a list which contained the English names of ten compositions.

After hearing each piece, the subjects were asked to indicate which one of the compositions they thought most likely to have been played.

Of the compositions heard, each with an obviously descriptive title, in only one case[19] was the title assigned to the correct piece by a majority of the subjects. In only two other instances were the titles and compositions correctly united by even a plurality. Wells observed that it is possible to "inculcate dogmas" about what certain musical compositions symbolize, but questioned the psychological validity of such techniques.

Paul Farnsworth[20] made a study using J. S. Bach's *Concerto for Clavier in d Minor.* The piece was played to two college groups of fifty students each. The members of one group were told the name of the composer. The subjects of the other group were given the impression that the piece had been composed by Buxtehude, who was known to only two members of the group. After hearing the work, both groups were asked to express the degree or amount of their enjoyment. The amount of enjoyment professed by the subjects who knew the composer to be J. S. Bach, whose eminence is almost universally learned through training, far exceeded the professed enjoyment of those who were led to believe that the relatively unknown Buxtehude was the composer.

In 1948 M. G. Rigg[21] experimented with three college groups, offering each the same music to rate, but varying the circumstances. The first group was told that the music they were to hear was of a romantic nature. No specific mood to relate with the music was given to a second group, but a third group was given the impression that the music was associated with Hitler and German nationalism. Though all groups listened to the same music, the responses of the three groups were markedly different.

The importance of training in the formation of musical taste was also observed by Mordton J. Keston.[22] He found that the most effective way to teach "music appreciation" (*i.e.* to bring about desired responses which most closely correlate with a presupposed standard of musical values) was to present the music with carefully planned comments.[23]

Musical Taste and Environment

Although it may be inferred from the observations presented thus far, that all students in the field believe musical taste to be a product of cultural conditioning, this is far from being the case. Attempts have been made to trace preference and taste through inheritance. One such effort was made by Ida Frischeisen Kohler.[24] The subjects listened to several different tempi on a metronome, and were to choose the one which was most agreeable. The experiments were repeated on the subjects at a later date in order to find the intra-individual constancy.

Frischeisen-Kohler disclaimed environmental conditioning as being significantly influential on tempo preference for two reasons. First, there was a high degree of intra-individual constancy in preference of tempi despite long intervals between the original test and the retests, and despite the fact that the tests were given at vastly dissimilar times of the day, (which would cause differences of mood). Second, there were marked differences between the preferences of monozygotic twins, and even greater differences between dizgotic twins as well as ordinary siblings. It was surmised by Frischeisen-Kohler that such pairs would experience the same environment and therefore, if environmental conditioning was significant, would exhibit similar preferences.

Tempo preference was demonstrated to be conditioned by the environment, however, by John P. Foley, Jr.,[26] in a similar experiment. Foley observed that women employed in occupations involving exposure to loud, rapid, repetitive noises as a constant source of auditory stimulation (*e.g.* typewriters, sewing machines, power tools) preferred relatively rapid tempi. Women whose occupations did not offer any such rapid auditory stimulation preferred slower tempi. It was discovered, moreover, that the mean preferences of the more rapid-preference groups increased and those of the slower-preference groups decreased or remained constant with increased time spent in occupational conditioning or experience.[27]

Supporting evidence that musical taste is, on the whole, conditioned by the environment was noted also by Karl F. Schuessler,[28] who sought to determine whether differences in socio-economic background could be associated with variations in musical taste. The subjects in Schuessler's experiment were played one minute excerpts from eight selections: *viz.* old song, classical, jazz, modern classical, old waltz, light classical, popular, hillbilly. They were to mark their preferences:

1 Like it a great deal.
2 Like it.
3 Dislike it.
4 Dislike it a great deal.
5 Undecided.

The test consisted of two parts. In the first part, the subjects were asked to provide background information regarding socio-economic status and musical training. The second part of the test was devoted to the actual listening.

Schuessler found differences of musical preference between men and women. He suggested that classical music in the American culture is primarily a feminine reaction, though this was not definitely established. In Schuessler's opinion, some of the variation in taste between men and women is due to a tradition in this culture which encourages men to regard certain kinds of music as effete, while women are conditioned to judge the same music as genteel.

Salient differences in preference were also discerned between age groups. According to Schuessler, these dissimilarities manifest the differentiating effect of age on social experience, for whereas the interests of young people lead them into contact with new music, old people become isolated from many kinds of new music.

Training was found to be important in the formation of musical taste, but Schuessler saw this to be related to socio-economic classes whose members are more likely to receive musical training than those in lower strata. Likewise, familiarity with the music affects taste, and a particular socio-economic position may cause an individual to be continually exposed to some kinds of music while remaining virtually isolated from others. In this respect, socio-economic background has a conditioning effect upon musical preferences and attitudes regardless of musical training.[29] Schuessler's qualification of this, however, is significant to music education:

> Although continuous exposure to a particular kind of music does not necessarily lead to a favorable attitude toward such music, it appears that isolation usually leads to negative judgment.[30]

There have been studies made the results of which do not completely coincide with Schuessler's. Keston and Pinto,[31] for instance, believed sex, age, and intelligence to be neglible factors in influencing musical taste. They observed musical recognition and training to be important factors. In addition, a high correlation was found between musical preference and intellectual introversion, which they define as a tendency on the part of a subject to think analytically, to theorize, and to pay attention to his own reactions and feelings in an aesthetic situation.[32] This is not to be confused with social introversion or extroversion, which Keston and Pinto claim have a low correlation with musical preference.

The opposite was found by John Johnstone and Elihu Katz[33] who, in working with popular music, noticed a high correlation between social extroversion and musical taste, as well between environmental conditioning and musical taste. They observed that preferences in popular music among adolescent girls varied according to the neighborhood in which a girl lived, and with her relative popularity among her peers. Girls who were highly popular conformed more closely to the prevailing neighborhood norms than did less popular girls. Musical preferences for particular songs and disk jockeys were found to be seated in small groups of friends. From this Johnstone and Katz inferred that personal relations play a major role in developing musical fads and shaping tastes.

Vincent R. Rogers[34] analyzed the musical preferences of school children in terms of:

1 Grade level.
2 Neighborhood (urban vs. suburban).
3 Socio-economic status.
4 Sex.

The music used for this research was divided into four categories.

1 "Serious" classical.
2 "Popular" classcal.
3 Dinner music.
4 Popular music.

(n.b. The quotation marks are supplied by the present author.)

Three pieces were chosen for each category by faculty members of the department of music of a university as being representative of that particular type of music. To make the problem of selection easy for the children, each item on the test was paired with every other item.

Rogers found an overwhelming preference for popular music at all age levels for all groups. There was a decline noted in preference for classical music as the children grew older. With increased age the children conform more and more to a single pattern of musical preferences. There were, for example, much greater differences between the preferences of individuals in the fourth grade than in the twelfth grade.

Sex was also found to be a factor, but related to maturation. The fact that girls mature sexually before boys, and the consequent earlier interest in the opposite sex, influences musical tastes, principally because popular music takes on entirely new social meanings to adolescent girls in about the seventh grade.

Rogers observed no significant differences between the musical tastes of children living in urban areas and those from rural areas, but there were considerable dissimilarities perceived in children coming from different socio-economic strata.

Summary

The results of studies into musical taste have not always been in complete agreement.[35] In summary, however, three fundamental conclusions seem justified based on the studies reported on in this paper.

First, musical taste exists only in terms of social norms. Taste may be judged solely in relation to the modal preference of a group, and in our present society, taste is usually judged in relation to the modal preference of a group which is considered expert in a given field.

Second, musical taste is a matter of cultural conditioning. An individual's preferences are shaped by his environment.

Finally, because it is a matter of cultural conditioning, musical taste is subject to training. One of the basic functions of the music educator is to bring the student from an awareness, through an understanding, to an appreciation of the art of music. This unavoidably involves the making of value judgments both by teachers and students. The fact that the concepts of good and bad music are in a constant state of flux need not present insuperable problems to the teacher, for his goal is not to present the student with a rigid formula, but to develop within the student the abiltiy to make knowledgeable judgments, to discriminate — now *and* in the future, based on a sociologically oriented value system. This is what the cultivation of musical taste means to this writer, and it is to this end that the music educator must strive.

FOOTNOTES

1. As translated by Max Graf, *Composer and Critic: Two Hundred Years of Musical Criticism* (New York: W. W. Norton and Company 1946), p. 80.
2. What Scheibe is describing, of course, is the Baroque style, of which the music of Johann Sebastian Bach is now considered the epitome. Scheibe, however, was caught up in the prevailing doctrines of the Age of Reason.
3. Graf, *op. cit.*, p. 137.
4. "Program Notes," *Beethoven's Nine Symphonies* (Radio Corporation of America, 1958), taken from Lawrence Gilman, *Orchestra Music: An Armchair Guide*, edited by Edward Cushing (Oxford University Press, Inc., 1951.)
5. Quoted by Donald Jay Grout, *A History of Western Music* (New York: W. W. Norton and Company, 1960). p. 631.
6. Graf, *op. cit.*, p. 137.
7. John H. Mueller and Kate Hevner, *Trends in Musical Taste: Analysis of the Repertoires of Eight Major Symphony Orchestras of the United States, of the Royal Philharmonic Orchestra and of Two American Opera Companies*, 1813-1941 (Bloomington, Indiana: Indiana University Publications, Humanities Series No. 8, 1942).
8. *Ibid.*
9. These conclusions have been supported in research by E. M. Verveer and H. Berry, Jr., "Change in Affectivity with Repetition," *The American Journal of Psychology*, XLV (1933), p. 130 ff. Verveer and Berry believed that the discrepant results of some investigations may, in part, be due to the use of different numbers and frequency of repetitions.
10. Mueller and Hevner, *op. cit.*
11. Mortimer J. Adler, "Musical Appreciation: An Experimental Approach to Its Measurement," *Archives of Psychology*, edited by R. S. Woodworth, XVII (1929-30), Serial Number 110.
12. Two series of tests were given. In the first test only one particular trait of each piece was singled out to be distorted in each variation (*i.e.* melody, rhythm, harmony), but because this made it impossible to have the variations uniform from piece to piece, it was not done in the distortions of the second test series.
13. *Ibid.*
14. M. R. Trabue, "Scales for Measuring Judgments of Orchestral Music," *The Journal of Educational Psychology*, XIV (October, 1923), pp. 545-561.
15. *Ibid.*
16. These were selected music supervisors, teachers, writers, and publishers attending sessions of the Eastern Music Teachers Association of New York, May, 1920.
17. F. L. Wells, "Musical Symbolism," *The Journal of Abnormal and Social Psychology*, XXIV (1929-30), p. 74 ff.

These included psychiatrists, graduate workers in psychology, social workers, and nurses.

Jungmann's *Longing for Home*.

Paul Randolph Farnsworth, Musical Taste; *Its Measurement and Cultural Nature* (Stanford, California: Stanford University Press, 1950) p. 64. This book is the most comprehensive in the field of musical taste.

Ibid., p. 64.

Morton J. Deston, "An Experimental Evaluation of the Efficacy of Two Methods of Teaching Music Appreciation," *The Journal of Experimental Education*, XXII, (September, 1953).

This study refuted the argument that the desired responses could best be produced by exposure to the music alone.

Ida Frischeisen-Kohler, "The Personality Tempo and Its Inheritance," *Character and Perosnality*, I (September, 1932-June, 1933), p. 301 ff. This study bears relevance to the present paper in so far as tempo preference is a contributing factor to the overall formation of musical taste.

Frischeisen-Kohler also investigated the musical preferences of parents in relation to twins and ordinary siblings but those results need not be reported here.

John P. Foley, Jr., "The Occupational Conditioning of Preferential Auditory Tempo: A Contribution Toward an Empirical Theory of Aesthetics," *The Journal of Social Psychology*, XII (1940), pp. 121-129.

This does not preclude the fact that some characteristics of musical taste might be inherited, but research in this area is scanty and inconclusive.

Karl F. Schuessler, "Social Background and Musical Taste," *American Sociological Review*, XIII (June, 1948), p. 330 ff.

No distinctions were found by Schuessler between different races of the same socio-economic level.

Schuessler, *op. cit.*

Morton J. Keston and Isabelle M. Pinto, "Possible Factors Influencing Musical Preference," *The Journal of Genetic Psychology*, (1955) pp. 101-113.

Ibid.

John Johnstone and Elihu Katz, "Youth and Popular Music: A Study of the Sociology of Taste," *American Journal of Sociology*, (1957) pp. 563-568.

Vincent R. Rogers, "Children's Musical Preferences as Related to Grade Level and Other Factors," *The Elementary School Journal* LVII (May, 1957), pp. 433-435.

See Rhoda Lee Fischer, "Preference of Different Age and Socio-Economic Groups in Unstructured Musical Situations." *The Journal of Social Psychology*, (1951) pp. 147-152. Using unfamiliar classical selections, Fischer found no differences between age, sex, or socio-economic groups where the identity of the composition is unknown. In general, though, the greatest evidence can be seen to refute Fischer's conclusions.

BIBLIOGRAPHY

Adler, Mortimer J.
"Musical Appreciation: An Experimental Approach to Its Measurement." *Archives of Psychology.* Edited by R. S. Woodworth, XVII (1929-30).

Farnsworth, Paul Randolph.
Musical Taste: *Its Measurement and Cultural Nature.* Stanford, California: Stanford University Press, 1950.

Fischer, Rhoda Lee.
"Preference of Different Age and Socio-Economic Groups in Unstructured Musical Situations," *The Journal of Social Psychology,* 1951.

Foley, John P. Jr.
"The Occupational Conditioning of Preferential Auditory Tempo: A Contribution Toward an Empirical Theory of Aesthetics." *The Journal of Social Psychology.* XII (1940), pp. 301 ff.

Frischeisen-Kohler, Ida.
"The Personality Tempo and Its Inheritance." Character and Personality, I (September, 1932-June 1933), p. 301 ff.

Graf, Max.
Composer and Critic: Two Hundred Years of Musical Culture. New York: W. W. Norton and Company, 1946.

Grout, Donald Jay.
A History of Western Music. New York: W. W. Norton and Company, 1960.

Johnstone, John and Katz, Elihu.
"Youth and Popular Music: A Study of the Sociology of Taste." *American Journal of Sociology.* 1957, pp. 563-568.

Keston, Morton J.
"An Experimental Evaluation of the Efficacy of Two Methods of Teaching Music Appreciation." *The Journal of Experimental Education,* XXII (September, 1953).

Keston, Morton J. and Pinto, Isabelle M.
"Possible Factors Influencing Musical Preference." *The Journal of Genetic Psychology,* (1955) pp. 101-113.

Mueller, John H. and Hevner, Kate.
Trends in Musical Taste: An Analysis of the Repertoires of Eight Major Symphony Orchestras of the United States, of the Royal Philharmonic Orchestra and of Two American Opera Companies, 1813-1941.

ogram Notes".
Beethoven's Nine Symphonies. Radio Corporation of America, 1958.

gers, Vincent R.
"Children's Musical Preferences as Related to Grade Level and Other Factors." *The Elementary School Journal,* LVII (May, 1957), pp. 433-435.

uessler, Karl F.
"Social Background and Musical Taste." *American Sociological Review,* XIII (June, 1948), p. 330 ff.

bue, M. R.
"Scales for Measuring Judgments of Orchestral Music," *The Journal of Educational Psychology,* XIV (October, 1923), pp. 545-561.

veer, E. M. and Berry, H. Jr.
"Change in Affectivity with Repetition." *The American Journal of Psychology,* XLV (1939), p. 130 ff.

lls, F. L.
"Musical Symbolism" *The Journal of Abnormal and Social Psychology,* XXIV (1929-30), p. 74 ff.

MUSIC READING

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INTRODUCTION

Music educators have generally agreed that music reading should be included in the school music programs. There is much disagreement as to the level of achievement which children should be expected to develop. The significance of music reading skills in the musical development of individuals can not be denied. This skill is considered an important element of appreciation, musical understanding and independent performance.

Music is a complex pattern of sounds and its notational system is of necessity complex. There are many elements to be considered: pitch, rhythm, temporal duration, tempo, dynamics, phrasing, attacks, and style. Music reading involves the simultaneous recognition and interpretation of all of these. Music reading as defined in this paper, consists of reading a musical score with respect to all obvious musical elements and reproducing the score either vocally or instrumentally.

Literature concerning music reading may be grouped in these broad categories:

1. Historical background of musical notation
2. Courses of study, methods books
3. Research literature.

This paper is concerned with the last two topics — research literature which has sought to determine the psychological foundations of music reading and methods utilized in its teaching in the classroom.

The methods used today seem to be quite variable and some experimentation is apparent. Most of the experimentation has been concerned with the use of mechanical devices and has not sought to form a substitute for the basic methods which have been in use for the last 150 years or more. Methods and techniques have been mentioned. It is not within the scope of this paper to determine the best method of teaching music reading. This problem can only be solved through extensive scientific research.

THE PSYCHOLOGY OF MUSIC READING

Music reading involves abstract thinking and the ability to deal with symbols. The only precise symbols used in music are those representing pitch and time. In order to correctly interpret musical notation there are four basic concepts which must be understood: (1) the concept of tonal relationships, (2) the concept of specific pitches, (3) the concept of time relationships with their expressive patterns in rhythms, and (4) the concept of form and design in the total organization.[1]

Mainwaring[2] gives the first stage in the evolution of a concept, musical or not, as that of interested perception. A situation creates interested attention and an awareness of an event or experience. As the stimulating situation recurs, recognition is gained and the experience is then distinguished from all other experiences. Initial understanding does not include awareness of the characteristics which differentiate this experience from others. An analysis of the experience leads to definition of the associated word or symbol. This definition should emerge from the experience and serve to clarify that which has occurred previously.

This would indicate that musical learning should proceed from sound to symbol. Perception and recognition of some musical "whole" should proceed to conceptual and analytical knowledge, from the making and hearing of music to its notational symbolization by using the notation to express only musical patterns already known.[3]

From these ideas can be evolved two basic psychological assumptions: (1) that interested perception, imitative reproduction, recognition and association with name or symbol are the main stages in the evolution of conceptual knowledge and (2) musical images are first perceived as a Gestalt pattern and analysis occurs when notational symbolization makes this necessary.[4]

Petzold[5] conducted a study for the purpose of gaining significant information regarding the perception of music symbols by children of average musical ability and children gifted musically at the fourth and sixth grade levels. The study was divided into two phases. Phase I dealt with auditory and visual perceptoin of musical sounds. The subjects were given a visual presentation of the first melodic pattern consisting of from three to six notes. After receiving the starting pitch of the group of notes the subject sang an immediate response. There was then a visual and aural presentation of the configuration after which they sang a response. The next item was then presented and proceeded in like manner through the entire test. The test was presented three times with the items randomized. In Phase II the subjects were divided into two sections. Section A was presented a song from which configuration were extracted for drill. The song was then presented for sight reading. Section B was drilled on the configurations and then presented with the song. The subjects in Section B showed a higher degree of recognition than those in Section A which might suggest that appearance of a configuration within a song is more meaningful than an isolated presentation. Although prior practice on the song did not appear to have much effect upon the learning of individual configurations, learning the song was made more effective through prior practice on the tonal configurations. This would appear to indicate that presentation of a song as a whole makes it difficult for children to then recognize the individual elements of the song when they are isolated. The investigator stated, however, that the data did not clearly establish that one sequence of tasks is superoir to another in developing music reading competence.

This study was conducted over a series of regularly scheduled music periods during the school year. During the testing period the investigator found the following conditions existing:

(1) Most children read the item very slowly, one note at a time.

(2) Although children experienced little difficulty in making a response to the aural stimulus, they were seemingly unable to reproduce it accurately. This implies that skill in reading music can be developed only if the child is able to hear the pattern silently before he sings it. Developing this internal hearing presents many problems including an adequate identification of effective teaching procedures.

(3) Children are usually aware of the general shape or direction of the tonal configurations but fail to acquire the ability to accurately identify the internal changes which make one pattern different from another.

(4) When asked to read tonal configurations which they do not recognize they:
  (a) Change the pattern to one familiar and similar to the stimulus
  (b) Guess that the response being made is something like the stimulus without having any sound basis upon which to judge the accuracy of their response.

(5) There was no significant difference between grades in terms of general ability to perform tasks.

In Phase II of the experiment, the gifted subjects consistently scored higher than did the average subjects. The music reading performance was more accurate and they learned the material at a rate three or four times faster than did the average subjects.

Another study involving students of average and above-average musical ability as evidenced by progress in music reading, was conducted by Harry King.[6] The Knuth Achievement Tests in Music, Form A. was administered to 550 fifth and sixth graders of Fredonia and Dunkirk, New York. Two parallel groups were formed as to chronological age, semesters in school, school grades, sex and extra-curricular music study. Group A contained 64 students who had little or no skill in music reading as evidenced by tests administered. Group B contained 64 students who exceeded the average pupil in the skill. The hypothesis was that music reading includes acts of a mental nature which are used in interpreting the symbols correctly, and that a relationship exists between music reading and intelligence.

The results of the Otis Self-Administering Tests of Mental Ability showed a substantial difference in group means in favor of Group B, the good music readers. Music reading is an intellectual process to at least the same extent as other academic subjects. A similar relationship between language reading ability and intellect has been discovered by several investigators.[7]

Apparently then the major problem of music reading centers around the methods used to help the child relate the auditory perception to the visual stimuli so that they are meaningful. The process of music reading appears to depend upon three perceptual levels: (1) the auditory perception of musical sounds, (2) the visual perception of musical symbols and (3) the integrated and internal process by which visual and auditory stimuli can evoke a response in terms of previous experience. The relationship between auditory and visual perception needs to be more clearly defined.

Petzold studied the development of auditory perception of musical sounds by children in grades one through six. Subjects of the study were 600 children, randomly selected, from the public schools of Madison, Wisconsin. Four tests were administered: (1) a 45-item test designed to provide information regarding the auditory perception of short tonal configurations, (2) a 20-item test designed to provide information regarding the consistency of responses to short tonal patterns, and (3) a phrase test designed to provide information regarding the auditory perception of larger musical unit and (4) the rhythm test which consisted of the 45-item test rewritten so that each represented an integrated melodic and rhythmic pattern. Subjects were requested to reproduce vocally each test item.

Results indicated a relationship between age and auditory perception, when scores for upper and lower grades were compared. There was no significant differences apparent between boys and girls.

The learning process in music involves two primary aspects: acquisition and retention of musical information and experience, and the development of musical skills.[9] Both of these are a part of what we term "tonal memory." The extent of the development of the tonal memory is a determinant factor in the degree of success with music reading. The training of the ear in tonal memory is an essential part of the musical development of children.

Otto Ortmann[10] conducted a study to determine the cause of difficulties in tonal memory which are commonly met in classroom situations. A series of short melodic phrases was given to a group of classes which were unselected as to age, intelligence and amount of training. All, however, were college music students. Scores obtained from the number of tones correctly reproduced within a group indicated the sequences which were relatively easy or difficult. Results of this indicated the following points to be kept in mind in training tonal memory: (1) begin with configurations of two tones, the first tone given. Use stepwise progressions first, then narrow skips, and wide skips last; (2) use repetition as the easiest element to remember first with diatonic progression, then with skips; (3) introduce skips one at a time, preferably at the beginning; (4) introduce more than one change of direction by using interrupted repetition, first with diatonic progression, then with skips. The adding of a second pitch change increases the difficulty; (5) increase variety of intervals in any one example gradually, first with change of pitch direction; (6) introduce changes in pitch-direction by repeating the same interval and (7) reserve examples containing all variables until preceding types have been mastered.

The results of this study were probably influenced by the previous musical experience of the subjects, since they were music students at a level of training that would indicate some prior study. The ease or difficulty with which they were able to respond to the stimuli was somewhat influenced by familiarity with musical elements such as scales or triads. The introduction of one variable at a time in melodic patterns would appear to be a valid means of training tonal memory.

Tonal memory requires active mental imagery. According to Seashore[11], the mental image operates in music in the following three ways: (1) in the hearing of music, (2) the recall of music, and (3) in the creation of music. Reading music is concerned with the first two aspects in addition to the reproduction of the mental image. Preceding the auditory mental imagery is the presentation of the visual stimuli. The total process involves the training of the eye and ear to transfer the symbol to musical production.

Studies of the visual process in music reading have generally been concerned with eye movements and the extent of the reading span. All of these experiments employ either the tachistoscope or a camera to photograph eye movements. These studies have been similar to those conducted in language reading. Tinker [12] studied eye movement duration, pause duration and reading time. The eye moves in jerks with pauses between movements during which apprehension occurs. The time taken for fixational pauses and that for eye movements gives the total reading time of any selection.

For all the materials employed, less than ten per cent of the reading time was taken by eye movement. The total average showed that only 5.9 per cent of the reading time was used by eye movements. This indicates that most of the time was consumed by perception pauses. When the mental processes involved were more complex the reading pauses consumed a relatively greater per cent of the total time.

These general principles of visual perception may be assumed to be applicable to music reading. The rhythmic character of music along with the requirement of a uniform tempo make music significantly different from language reading.[13] Although language reading involves accents and the use of rhythmic groups, it does not involve a regularly recurring beat as is the case with music. It is the regular measure accent which distinguishes a musical rhythm from the rhythm of poetry or prose.

In language reading eye movements and perception deal only with horizontal direction. In music reading horizontal, vertical and all angles of oblique directions are met. Visual span in music reading, therefore, is concerned with diameter rather than a single dimention. Ortmann[14] investigated the span of vision in note reading. He photographed eye movements of subjects from the Peabody

Conservatory of Music in Baltimore. He utilized patterns of three notes and distributed the notes in varying spatial arrangements. He found that the field of clear vision included a circular area of between ¼ and ⅓ of an inch in diameter. The subjects of the experiment were able to read notes on adjoining lines and spaces when the horizontal distribution was more than ⅓ of an inch. It was easier to read notes in one direction, the particular direction was of no consequence. Ortmann equated this with language reading in that the page of a book may be turned at an angle of as much as 80 degrees without a noticeable decrease in reading speed. Only when a 90-degree angle is reached does the rate of speed sharply decrease.

Weaver[15] discovered that the average perceptual span for musical symbols varied between three and five notes for different kinds of note arrangements. He compared the results obtained in studies of word reading with the results gained from his study and concluded that one musical note is practically equivalent to one word. The average number of words per reading pause reported in studies of word reading is very similar to the average number of notes per pause for the selections used in a study by Weaver.[16] A chord or phrase of music would correspond to a phrase of words.

The speed of music reading, for the subjects in the experiment, was more closely related to the durations of reading pauses than to the number of pauses. This was not found to be true in studies of word reading.[17]

The speaking of words retards the reading process. More fixations are made in oral reading, because this retardation allows more time for the reader to thoroughly scan the page. This is analogous to reading music in a slower tempo.

Although there have been many parallels drawn between music reading and language reading, it must be remembered that the former is a complex and different skill. Patterns of notes rarely are seen in the same combinations as are alphabets in words. There are many more variables concerned in music reading. Tempo-rhythm, dynamics, pitch, duration, attack must all be considered simultaneously. While there are many elements to be considered simultaneously in reading any symbolism, the internal musical process of perception and reproduction appears to be more complicated.

Weaver and Van Nuys[18] studied the reading of musical rhythms and melodies by recording photographically the activities of the reader's eyes and the keyboard execution of musical phrases. The subjects were twelve men students at the Oberlin Conservatory of Music in Ohio. One group of twelve-note phrases written on the treble staff were presented to the subjects of the experiment. The patterns were varied with some having rhythmic patterns with no pitch changes, some containing melodic patterns having notes of only one time value and some containing combinations of these rhythmic and melodic patterns. Prior to presentation of the test material each subject was given experience in reading before a camera. During the test each phrase was presented for 2.8 seconds.

In this time the subject prepared himself to execute each phrase as completely as possible immediately following the presentation.

From the records of the keyboard performances the number of notes correctly executed was determined for each phrase. From the records of ocular behavior the durations of reading pauses, the number of notes scanned, and the number of backward movements of the eyes were determined for each phrase. The average number of notes executed correctly during each reading pause was determined from each kind of records.

The memory span decreased as the complexity of note relationships increased for both rhythm and melody. The difference between the number of notes perceived visually during the exposure period and the number executed correctly was greater for the three most difficult melodies than it was for the rhythms. Backward movements of the eyes occurred more frequently for the melodies than for the rhythms.

The results of the study indicated that the melodic factors constitute the limiting conditions for memory span whenever the melody is not extremely simple. An increase in memory span depends largely upon improvements in the ability to apprehend pitch patterns as stable melodic parts of a composition. The rhythmic factors constitute the limiting conditions for the rate of reading or average pause duration whenever the rhythm is not extremely simple. This implies that increase in rate of reading depends upon improvements in ability to grasp rhythmic figures.

Tonal memory is again indicated as an important factor in musical development. Since musical material must be organized in advance of its reproduction, this factor is important in determining how far ahead of execution the performer can read.

Using memory span as an index of diffifulty the investigators[19] rated the phrases as the easiest to the most difficult as follows: (1) a rhythm composed of a simple repeated figure involving only three different note values, (2) melodies progressing scalewise or by symmetrically arranged thirds, (3) rhythms having four or more note values in varied patterns, and (4) melodies having pitch intervals of a fifth or larger arranged in irregular progressions.

The Gestalt theory as applied to language reading also has implications relevant to music reading (as indicated on Page One of this paper). The sentence, story and occasionally the word method of teaching language reading are sometimes described as an application of the Gestalt concept that one should begin with a large, meaningful whole and leave the discovery of the individual parts to a process of analysis.[20] The Gestalt psychologists believe that the natural way to discover parts is by a process of analysis from a larger whole. This idea is equated with the development of human behavior. According to this view an infant first reacts to a stimulus as a whole. A differentiated response comes with learning and development. Another Gestalt principle is that the whole is greater than the sum of its parts or that the whole contains properties which cannot be found in any of its parts. The meaning of a sentence, as well as a musical phrase, is found in the relationship of its parts.

The importance of Gestalt perception was found to be a factor in two experiements involving music reading. Kenneth Bean[21] conducted a study of the complexity of musical patterns that could be perceived with one fixation of the eyes by individuals with various degrees of musical training and experience. The tachistoscope was used in the presentation of the musical materials. The subjects were requested to notate musical patterns presented on a staff following a brief exposure. The overall pattern of the pitch heights was grasped even when individual notes within the group were notated incorrectly. The results of a careful study of the kinds of errors that were made persistently led to a Gestalt interpretation of music reading, which could be applied to music learning just as Gestalt principles have been applied to language reading. Bean assumed from this data that a close analogy exists between the reading of words and the reading of music, because there are groups of notes which are definite perceptual units and in this way the equivalent of words. A similar analogy was assumed by Weaver from the results of the study mentioned previously. Every musician has a musical vocabularly just as he has a language vocabulary and familiar patterns should be recognized at a glance.

Otto Ortmann [22] studied elements of chord reading in music notation. The material was presented on a series of flash cards in a classroom presentation. The notes were placed on a staff without a clef. Each card was exposed 2/5 of a second and all the subjects, who were college students, then wrote on staff paper what they had seen. Difficulty of apprehension increased sharply after chords of four notes. There was an increase in errors as the vertical distance increased. When notes of the chordal group formed parallel lines both horizontally and vertically they were easier to read.

He discovered that the eye was first attracted to the portion of the pattern with the closest cluster of notes and there were fewer errors for these parts. A recognizable chord unit, such a chord built in thirds, was easiest to read. He paralleled this to word reading. If the chord unit is anticipated and the stimulus coincides with the anticipated unit, the example is easy to read. He termed this mental set. Here again as in Bean's study the subjects grasped the geometric outline of the chord as a whole, although individual notes may have been missed.

Music reading has five aspects in its complete form: (1) eye movements, (2) visual perception, (3) auditory perception, (4) the mental process involved in integrating the visual and auditory perception, and (5) reproduction of the visual stimuli. The ability to read efficiently depends upon all of these factors, which exist as an instantaneous reaction.

Experiments have indicated the manner in which the eye moves during reading. The span of perception has been set at approximately three to six notes during one fixation in an area of ¼ to ⅓ of an inch. Generally the geometric outline of a tonal pattern is perceived and related to previous experiences with tonal patterns.

The most complex action of music reading is that of relating visual and auditory perceptions and their reproduction, particularly vocal reproduction since instrumental reproduction is somewhat mechanical. Music reading can be analyzed as a pattern of perceptual response behavior. Its development depends entirely on ear, eye and understanding.

METHODS OF TEACHING MUSIC READING

Every program of music reading should be planned to promote and develop growth in music awareness. Every procedure for the teaching of reading must meet one essential requirement — it must be designed to enhance and improve the learner's understanding of music.[23] It should be preceded by the development of inner hearing and imagery.

The concept of readiness has become an important factor in planning the music reading program. Readiness is a combination of many abilities, skills, understandings, and interests, each of which contribute in some manner to the process of learning to read. The following factors have been proposed as important to a child's readiness to begin language reading and may be applicable in some meassure:[24] (1) perceptual development, (2) intellectual development, (3) maturational adequacy, (4) background of personal experience, (5) auditory and visual discrimination, (6) sensory development, (7) attitudes and motivation, (8) social and emotional development, and (9) instructional methods and procedures. Generally music educators characterize music reading readiness by understanding of concepts of rhythmic movement, high and low, fast and slow, loud and soft, phrase divisions and skill in singing including an acquaintance with a wide range of songs and instrumental music.

Through the years there has been much disagreement among music educators as to the best method of teaching music reading. There are, however, some generalities which can be recognized as the characteristics of any good method. First an effective method must approach the problem through actually making and experiencing music. It should have an immediately functional or interesting purpose. It should foster a positive attitude toward music as an expressive art and it should have some carry-over value outside the music classroom. The method should develop the student's framework of concepts so that each new problem can be related to knowledge previously acquired.

The most widely used methods of teaching music reading have utilized the fixed do and the moveable do systems, singing scale letter names and numbers have been variations of the syllable methods. There have been periods of using the drill to song sequence and periods of using the song method, in which tonal patterns are learned as they appear in songs.

The use of syllable names is a device for aiding the observation of tonal relationships. According to Birge the tonic sol-fa began to be used in England about 1840. Started by Elizabeth Glover, it was perfected by John Curwen, and became the accepted method of primary music education in the British schools.[25] Curwen's tonic sol-fa system was reinforced by a system of hand signs, whose use in this country has been somewhat revived through methods books such as the one written by Mary Helen Richards. The tonic sol-fa method is commonly known as the moveable *do* system since any note may be *do* and a scale using the other syllables is sung on that tone. This system becomes rather awkward when used with music which contains modulations.

The fixed *do* system utilizes c as *do* regardless of key. This system was used extensively in France, Italy and Belgium. It was advanced in this country through the prevalence of instrumental study.

Cleo Silvey [26] conducted a study to determine the personal reactions to the solmization system of teaching music reading. For purposes of comparison and in order to check on degree of retention three levels of musicians representing various distances away from the elementary school were used: high school students, college students and church-municipal groups. There were 1804 subjects. They were presented a questionnaire requesting that solmization be rated along with six other factors that may aid music reading. The factors used were: home training, private study, experience in singing, solmization by numbers, relative position and by unison in the grades. Solmization was ranked from fourth to sixth in this survey. The investigator concluded that solmization does not yield results which carry over in later years of musical activity that would justify the emphasis placed on it in the elementary school. This view would be contradicted by many music educators.

Some music educators have advanced the idea of using only folk song material in music reading. Its basic difference from other methods is the avoidance of material especially composed to provide drill on certain notational aspects.[27] Notation is treated as incidental to the aesthetic experience in music. There is no set sequence for introduction to musical elements.

Another method centers on the use of the tonic chord and neighboring tone material. A rote song, based on the tonic chord figuration, is first taught aurally for future visual study.[28] In learning it, sol-fa syllable, or a neutral syllable may be employed. It is felt that the approach through the tonic chord presents a basic vocabulary for the learning of music. The songs are analyzed as to identical contrasting phrases and the phrase structure is made the center of the learning process.

The system of eurhythmics developed by Jacques-Dalcroze involves the use of rhythmic physical movement, listening, solfege, improvisation and the general stimulation of artistic and musical sensibilities. He places ear training as the initial step of music learning. By means of movements of the whole body, students are equipped to realize and perceive rhythms.[29]

George H. Kyme[33] contrasted the results of teaching music reading with conventional notation and shape notes. The experimental groups were taught using the seven-shape notation developed by Jesse B. Aikin in *The Christian Minstrel* (1846), a notation which is derived from the four-shape system of *The Easy Instructor*. The subjects in this study were 183 fourth and fifth grade students from various schools in the San Francisco Bay area. Results of the study revealed that the experimental groups were superior in music reading ability in all the situations compared.

Music reading has been approached through creative projects. Students are encouraged to use music as a means of expression. They might create tunes for a favorite poem and have it written in notation by the teacher, from which a learning situation develops. The creative approach requires a rich background of listening and singing experience.

A method of teaching can not be controlled by a strict sequence including every minute detail. There are probably as many methods as there are teachers. A method should be thought of in terms of the general end to be achieved and the broad effects which will be produced in students.

There have been many studies conducted which have attempted to evalute various methods of teaching music reading. The more recent ones have been concerned with the application of the newer educational developments to music.

Since music is auditory-visual phenomen, it would appear that the use of audio-visual aids would greatly enhance a music reading program. Doris Hutton[34] compared the results of teaching reading with and without the use of special visual materials. Two sections of a fourth grade class, alphabetically grouped, participated in the study.

At the beginning of the year, each group was tested as to sight reading ability by presentation of the Bach chorale, "Oh, Morning Star," from *New Music Horizons*, Book Four. At the end of the year the test was repeated.

The experimental group was taught music reading with the aid of flash cards, musical games, and slides used with the opaque projector. The flash cards contained the intervals of all the songs taught during the year. The musical game used was one similar to Bingo with the cards containing musical symbols. The slides contained the music to simple folk tunes with both the titles and words omitted.

Although there was a significant increase in music reading ability apparent in both groups, the experimental group scored higher than the control group in the final music reading test. It was felt that audio-visual materials could be utilized effectively in the teaching of music reading.

Music reading films were produced by Ralph Rea[35] which would force the student to read ahead of where he is playing and prevent eye regression. This would develop visual memory and give practice in sight reading. Varied keys, rhythms and other elements were used in the musical materials. Twelve films were produced under the general title "A Training Program to Improve the Sight Reading Ability of Cornet and Clarinet Players . . . Adapted with permission from publications of Rubank, Inc."

Each film bears a title and the material used in progressively more difficult.

The films progressed in this manner: presentation of an "eyelead" unit containing time and key signatures with accompanying vocal instructions, the tempo was given by the click of a metronome, the subject began playing. Once he started playing the music was projected from two to eight notes ahead of his performance. The control group practiced music reading from conventional manuscripts.

Although the results of the experiment were inconclusive, this study provides a basis for the production of similar courses of study.

Programmed learning has attracted much attention since the advent of the automatic testing machine in 1920. Several experiments have been conducted utilizing taped materials to develop aural perception in a structural learning situation. Programmed learning is characterized by these factors: (1) material to be learned is presented in a logical series of small steps (usually referred to as frames) which lead from the known to the unknown; (2) a response to each of the steps, or frames is given by the student, and (3) the student is provided with immediate knowledge of the accuracy or the inaccuracy of his response.[36] The material is self-instructional and permits the student to move at his own pace.

Carlsen[37] programmed a melodic dictation course which was printed in book form and the melodies were recorded on magnetic tape. The completed program, consisting of 617 frames, was used in an experiment conducted for the purpose of investigating certain variables which pertain to the development of melodic dictation ability by means of programmed learning. Among the problems investigated were: (1) the comparative effectiveness of branching (nature of response determines the sequence) and linear (steps presented in a fixed sequence) technique for programming melodic dictation, and (2) the value of programmed learning as a teaching method in melodic dictation.

The control group was taught melodic dictation by a teacher and the experimental group was taught solely by means of programmed instruction with sub-groups utilizing branching and linear programming techniques. Subjects for the experiment were college students in the first year of ear training.

Results of the study showed that there was no evidence of superiority of one method of programmed learning over the other.

The difference in effectiveness of teaching method was more noticeable in the direction of more complex aural perception concepts. In the experimental situation the programmed learning technique proved more effective than the traditional classroom-teacher approach.

Programmed learning involving audio aids holds great relevance to music reading, in that the development of aural perception is basic to the reading skill. If these techniques are used concomitant to the teacher-classroom, more individualized instruction can be given which should result in greater gains for the student. It must be determined what portion of the program can only be taught by the teacher and what portion can be just as effectively taught by automated music training. In the words of Walter Ihrke: "The specific elements of music (pitch and rhythm) adapt themselves remarkably well to automated training and still keep their essentially musical character. Since reading notation, hearing the sounds to be produced, and then producing them on the machine is an integrated action, it is possible for the student to be completely engrossed in the music even while he is mechanically manipulating a machine."[38] One of the major problems in music education today is the amount of time allotted to it in the public school system. Generally a small portion of this problem is the use of more efficient methods. If automated learning can provide this, it certainly warrants research into how it can be most effectively utilized.

The tachistoscope, an instrument in visual education, has reportedly been used with much success in developing language reading skills, spelling, typing, shorthand and the like. In a study conducted by Henry Hammer, tachistoscope methods significantly improved music reading skills.[39] Subjects of the study were 45 fourth grade students. Melodic patterns were presented for practice by means of the tachistoscope.

Tachistoscope techniques are considered highly efficient and capable of retaining the student's attention and interest. The fact that the material is exposed for a brief period of time demands an alertness that is sometimes lacking in the classroom. One of primary values of automated devices may be motivation of the mind to work up to its capacity and at a faster rate. The short exposure time will certainly increase the span of recognition, increase the accuracy of perception, and develop the ability to organize the material so that it can be reproduced quickly. Extensive research should be conducted to determine the effectivness of this and other techniques in music learning.

SUMMARY

As yet there is no one method of teaching music reading that can be considered the best way. A variety of methods can be used if teachers are alert to the needs of the students and know when and how to apply them. Psychological theories of learning can also be the underlying principles for music reading.

Music reading should be neither neglected nor overemphasized. It should be integrated into the total music program and should be reinforced by other musical activities, such as singing, listening and creating. Goals can be flexible with each child moving at his own rate. Learning to read music should not be nor must it be an unpleasant experience. There are many activities which foster the natural spirit of inquiry and creativity which are inherent in every child. The skillful teacher knows how to utilize this characteristic to the best advantage in any learning situation.

Singing by note in no way precludes rote singing. Indeed, rote singing should precede the levels attained by note singing. Some songs can be sung using both methods, reading the familiar motives and singing the other parts by imitation. The teacher should determine when to help the students and when not to help. Music reading objectives should never hinder the presentation of rich and varied music.

FOOTNOTES

Adela Bay. "A New Approach to An Old Problem," *Music Educators Journal*, (September-October, 1964), p. 64.

James Mainwaring. ("Psychological Factors in the Teaching of Music," *British Journal of Educational Psychology*, Vol. XXI, Part II, (June, 1951), p. 109.

Ibid., p. 113.

Ibid., p. 114.

Robert G. Petzold. "The Perception of Music Symbols in Music Reading by Normal Children and by Children Gifted Musically," *Journal of Experimental Education*, 28 (1960) p. 272.

Harry King. "A Study of the Relationship of Music Reading and IQ Scores," *Journal of Research in Music Education* (Spring, 1954), p. 35.

Henry P. Smith and Emerald Dechant. *Psychology of Teaching Reading*, (Englewood Cliffs, New Jersey: Prentice-Hall, 1962), p. 106.

Robert G. Petzold. "The Development of Auditory Perception of Musical Sounds by Children in the First Six Grades," *Journal of Research in Music Education*, (Spring, 1963), p. 21.

Carl Seashore, *Psychology of Music*, (New York: McGraw-Hill Book Company, 1938), p. 149.

Otto Ortmann. "Some Tonal Determinants of Melodic Memory," *Journal of Educational Psychology*. XXIV, (1933), p. 467.

Seashore, *op. cit.*, p. 169.

Miles Tinker. "Eye Movement Duration, Pause Duration and Reading Time," *Psychological Review*, 35 (1928), p. 385.

Homer E. Weaver. "A Study of Visual Processes in Reading Differently Constructed Musical Selections," *Psychological Monographs* 55:1 (1943), p. 4.

Otto Ortmann. "Span of Vision in Note Reading," *Yearbook of The Music Educators National Conference*, (Chicago: MENC, 1937), p. 88-93.

Weaver, *op. cit.*, p. 28.

16. Walter F. Dearborn and Irving H. Anderson. *The Psychology of Teaching Reading,* (New York: Ronald Press Company, 1952). pp. 128-136.
17. *Ibid.*, p. 130.
18. Homer E. Weaver and Kelvin Van Nuys. "Memory Span and Visual Pauses in Reading Rhythms and Melodies," *Psychological Monographs* 55:2 (1943), pp. 33-50.
19. *Ibid.*, p. 130.
20. Dearborn and Anderson, *op. cit.*, *p.* 241.
21. Kenneth Bean. "An Experimental Approach to Music Reading." *Psychological Monographs* 50:6 (1938), p. 1-80.
22. Otto Ortmann. "Elements of Chord Reading in Music Notation," *Journal of Experimental Education,* (1934), pp. 50-57.
23. James Mursell. *Music Education: Principles and Programs.* (New York: Silver Burdett, 1956), p. 170.
24. Smith and Dechant, *op. cit.*, p. 85.
25. Edward Birge. *History of Public School Music in the U.S.* (Pennsylvania: Oliver Ditson Company, 1938), p. 105.
26. Cleo Silvey. "A Study of Personal Reactions to The Solmization Method of Teaching Music Reading," *Peabody Journal of Education* XV:83 September, 1937), p. 112.
27. James Mursell. *Human Values in Music Education.* (New York: Silver Burdett and Company, 1934), p. 187.
28. *Ibid.*, p. 189.
29. Emile Jacques-Dalcroze. *Rhythm, Music and Education,* (New York: G. P. Putnam's Sons, 1921), p. 79.
30. *Ibid.*, p. 258.
31. Irving Lowens and Allen P. Britton. "A History and Bibliography of The First Shape Note Tune Book," *Journal of Research in Music Education,* (Spring, 1953), p. 35.
32. *Ibid.*, p. 32.
33. George H. Kyme. "An Experiment in Teaching Children to Read Music with Shape Notes," *Journal of Research in Music Education,* (Spring, 1960), pp. 3-8.
34. Doris Hutton. "A Comparative Study of Two Methods of Teaching Sight Singing in the Fourth Grade," *Journal of Research in Music Education,* (Fall, pp. 119-126).
35. Ralph Rea. "Music Reading Film," *Journal of Research in Music Education,* (Fall, 1954), pp. 147-155.
36. James Carlson. "Programmed Learning in Melodic Dictation," *Journal of Research in Music Education,* (Summer, 1964), p. 139.
37. *Ibid.*, p. 142.
38. Walter Ihrke. "Automated Music Training," *Journal of Research in Music Education,* (Spring, 1963), p. 20.
39. Harry Hammer. "An Experimental Study of The Use of The Tachistoscope in the Teaching of Melodic Sight Singing," *Journal of Research in Music Education,* (Spring, 1963), pp. 44-54.

BIBLIOGRAPHY

Anderson, Irving and Walter Dearborn. *The Psychology of Teaching Reading.* (New York: The Ronald Press Company, 1952).

Bay, Aleda. "A New Approach to an Old Problem," *Music Educators Journal,* (September-October, 1964).

Bean, Kenneth. "An Experimental Approach to Music Reading." *Psychological Monographs* 50:6 (1938).

Birge, Edward. *History of Public School Music in the United States.* (Bryn Mawr, Pennsylvania: Oliver Ditson Company, 1938).

Bodegraven, Paul Van. "Music Reading," *Music Educators Journal* 35:71-72, (February-March, 1949).

Brooks, Marian and Brown, Harry. *Music Education in the Elementary School.* (New York: The American Book Company, 1946).

Carlsen, James. "Programmed Learning in Melodic Dictation," *Journal of Research in Music Education,* (Summer, 1964).

Chadwick, J. E. "Predicting Success in Sight Singing," *Journal of Applied Psychology* 17:671-674 (1933).

Geders, Sr. Alphonse. "A Method of Teaching Music Reading," *Missouri Journal of Research in Music Education,* (Autumn, 1962).

Gibson, Ellen. "40,000 Children Learn Do. Re. Mi.," *Educational Music Magazine,* XX (March, 1941).

Gordon, E. B. "Why Johnny Can't Read," *Music Educators Journal,* (January, 1958).

Hammer, Harry. "An Experimental Study of the Use of the Tachistoscope in the Teaching of Melodic Sight Singing," *Journal of Research in Music Education,* (Spring, 1963).

Hutton, Doris. "A Comparative Study of Two Methods of Teaching Sight Singing in the Fourth Grade," *Journal of Research in Music Education,* Fall, 1953).

Ihrke, Walter. "Automated Music Training," *Journal of Research in Music Education,* (Spring, 1963).

Jacques-Dalcroze, Emile, *Rhythm, Music and Education.* (New York: G. P. Putnam's Sons, 1921).

Jersild, Arthur T. and Bienstock, Sylvia. "A Study of The Development of Children's Ability to Sing," *Journal of Educational Psychology* XXV (1934).

King, Harry. "A Study of the Relationship of Music Reading to IQ Scores," *Journal of Research in Music Education,* (Spring, 1954).

Kwalwasser, Jacob. *Problems in Public School Music,* (New York: Educational Publications, 1932).

Kyme, George. "An Experiment in Teaching Children to Read Music with Shape Notes," *Journal of Research in Music Education,* (Spring, 1960).

Lowens, Irving and Britton, Allen P. "A History and Bibliography of the First Shape Note Tune Book," *Journal of Research in Music Education,* (Spring, 1953).

Mainwaring, James. "Phychological Factors in the Teaching of Music," *British Journal of Education Psychology* XXI, Part II (June, 1951).

Morgan, Hazel, ed. *Music in American Education: Music Educators Source Book,* Number Two, (Chicago: MENC, 1955).

Mursell, James. *Human Values in Music Education*, (New York: Silver Burdett and Company, 1934).

. *Music in American Schools*, New York: Silver Burdett, (1934).

. *Music Education: Principles and Programs*, (New York: Silver Burdett and Company, 1956).

. "Reading Music," *Music Education*, National Society for the Study of Education Thirty-fifth Yearbook, Part II. (Bloomington, Illinois: Public School Publishing Company, 1936).

and Glenn, Mabelle. *The Psychology of School Music Teaching*, New York: Silver Burdett, 1931).

Nye, Robert and Nye, Vernice. *Music in the Elementary School*. (New Jersey: Prentice-Hall, Incorporated, 1964).

Ortmann, Otto. "Elements of Chord Reading in Music Notation," *Journal of Experimental Education* 3: 1934.

. "Some Tonal Determinants of Melodic Memory," *Journal of Educational Psychology*, XXIV (1933).

. "Span of Vision in Note Reading," *Yearbook of the Music Educators National Conference Proceedings*, (Chicago: MENC, 1937).

Petzold, Robert G. "The Perception of Music Symbols in Music Reading by Normal Children and by Children Gifted Musically," *Journal of Experimental Education* 28 (1960).

. "The Development of Auditory Perception of Musical Sounds by Children in the First Six Grades," *Journal of Research in Music Education*, (Spring, 1963).

Rea, Ralph. "Music Reading Films," *Journal of Research in Music Education* 2 (Fall, 1954).

Rebmann, Victor. "Experiments in Teaching Sight Reading with Systems Other Than the Movable Do," Music Supervisors National Conference, *Journal of Proceedings*, (New York: The Cayuga Press, 1930).

Rinderer, Leo. *Music Education*, (Park Ridge, Illinois: Neil Kjos Music Company, 1955).

Salisbury, F. S. and Smith, H. B. "Prognosis of Sight-Singing Ability of Normal School Students," *Journal of Applied Psychology* 13: 199 (1929).

Seashore, Carl. *Psychology of Music*, (New York: McGraw-Hill, 1938).

Silvey, Cleo. "A Study of Personal Reactions to the Solmization Method of Teaching Music Reading," *Peabody Journal of Education* XV: 83 (September, 1937).

Smith, Henry and Dechant, Emerald. *Psychology of Teaching Reading*, (Englewoods Cliffs, New Jersey: Prentice-Hall, Inc., 1962).

Stetson, R. H. "The Psychology of Reading Music," *The Proceedings of the Music Teachers' National Association* 20 (1925).

Snyder, Alice M. "Guidelines for A Music Reading Program," *Music Education Journal* (February-March, 1963).

Tinker, M. A. "Eye Movement Duration, Pause Duration, and Reading Time," *Psychological Review* 35 (1928).

Weaver, Homer E. "A Survey of Visual Processes in Reading Differently Constructed Musical Selections," *Psychological Monographs* 55:1 (1943).

and Van Nuys, Kelvin. "Memory Span and Visual Pauses in Reading Rhythms and Melodies," *Psychological Monographs* 55:2 (1943).

Wheeler, Lester R. and Wheeler, Viola D. "The Relationship Between Music Reading and Language Reading Abilities," *Journal of Educational Research* 45 (1952).

Wyatt, Ruth. "Improvability of Pitch Discrimination," *Psychological Monographs*, XVIII (1945).

UNPUBLISHED MATERIAL

Dominey, Elizabeth. *Music Textbooks in Elementary Education.* Unpublished Ed. Thesis, New York University, 1958.

White, Adolph. *The Construction and Validation of Group Test in Music Reading for Intermediate Grades*, Unpublished Ph.D. Thesis, University of Minnesota, 1963.

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THE USE OF NOTATED EXAMPLES IN FIFTH-GRADE MUSIC APPRECIATION CLASS

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(The article by Miss Oberdin is reprinted here with the kind permission of the author and of the *Journal of Research in Music Education*. It follows the article by Mrs. Pierce for the purpose of comparison of differing points of view.)
THE EDITOR.

Is the use of notated examples with fifth-grade students more effective in increasing the student's ability to recognize musical themes aurally than is a presentation without the use of notated examples? For many years book and record albums devoted to music appreciation have printed notated examples of themes. More recently, record albums designed for elementary schools have also included large strips of notated themes for class use. Cahn's study of problems in teaching music appreciation advocates the use of "devices which present musical concepts by relating them to sensory experiences such as sight, shape and movement."[1]

A study similar to the one presented here was conducted by Smith using 101 college students as subjects.[2] He concluded that there was a significant difference in ability to recognize themes when notated examples had been used in the presentation. This difference remained whether it was tested immediately following the presentation or at later intervals. The ability to read notation appeared to have no significance. While musical aptitude seemed to increase the value of the examples, they remained significantly valuable to all.

No attempt was made in the earlier study to discover any relationship between IQ and the value of the examples. Neely's study found a positive relationship between IQ and the ability to notate rhythmic patterns.[3] He also found that high-IQ students made more improvement on achievement tests. There has been some disagreement on the relationship of IQ and musical ability.[4] This disagreement probably stems from the difference in factors tested on various musical ability tests. More research needs to be done to determine the factors which truly represent musical ability. A larger IQ range would probably be present more in an elementary school situation than among subjects selected from a college group.

The individual's musical development proceeds in a logical sequence. Mursell has listed a number of tentative growth gradients in music.[5] Petzold finds that age and development of auditory perception are related.[6] The relationship is stronger at a three-year interval than at a one- or two-year interval. Some support of this is found in Bokelheide's study which discovered that eight- and nine-year-old children had not developed to a high degree the ability to relate the aural to the visual.[7] Colwell finds that children lack training in learning to listen with understanding and discrimination.[8] In another study he concluded that pupils do not progress in achievement yearly.[9] Thus, children may have been afforded many opportunities to hear music and yet have gained little knowledge or development from the experience. Physical development, as evidenced by grade level, and musical development, as represented by fewer years of possible exposure, could make former findings concerning use of notated examples invalid as applied to fifth-grade students.

Although prior research would certainly give a strong indication of the validity of the hypothesis tested, it would seem unreasonable to ignore the possible effects of maturation, musical development, and general intelligence.

The Experimental Design

The two fifth-grade classes used for this study were selected purely on the basis of availability. The subjects included all students in these two classes in one elementary school located in Lemon Grove School District in San Diego County, California. Both classes contained heterogeneous ability groups. A total number of fifty-eight children were included. Of these, twenty were girls and thirty-eight were boys with the sexes being fairly evenly divided between the two groups.

Twenty musical themes were selected, ten of which were presented to both classrooms, while the remaining ten were included in the final test as unfamilar themes. The ten themes presented were then placed in numerical order, one through ten, so that the odd- and even-numbered themes were matched in difficulty as far as possible.

All students in the experiment were then given the *Drake Musical Aptitude Tests*, Form A, and the *Kwalwasser-Ruch Test of Musical Accomplishment*. The IQ scores from the *Scat-Step Tests* were already available. The two classes were designated A and B. Each group served as both control and experimental on a type of rotation design. Group A used notated examples on all odd-numbered themes while Group B used notated examples on all even-numbered themes. The themes were presented in two sessions each week, with two themes being presented in each session. Recordings from the *Bomar Orchestral Library* were used in the presentation of the themes as it was felt that this was the most functional type of presentation. The experiment was conducted during a three-week period, with a test for recognition of themes being given during the final week.

The taped test for recognition of themes included twenty piano renditions of melodic themes each designated with a letter name and played in random order. Each student was given a test instrument on which he scored each theme as familiar or unfamiliar; if the themes were familiar, the student had the further option of matching the letter name given on the tape with the correct title on the test instrument. The test used piano renditions of melodic themes to avoid reliance on specific instrumentation as a variable aid to memory. Each student received two test scores, one for recognition of themes on which notated strips were used, and another for recognition of themes presented without notated strips.

Treatment of Data

Several comparisons were made possible by this research design. Group A used notated examples of odd-numbered themes but did not use examples on even-numbered themes. When a t-test was computed on the difference between the scores, there was no significant difference.

Group B used notated examples on even-numbered themes, so a t-test was computed on the difference between scores for Group B. In this case the t was 2.49, which meant there was a significant difference in class B when the strips were used. This difference opened the possibility that the even-numbered themes were more easily recognizable than the odd-numbered themes.

The design allows for a further comparison by checking the difference in the scores on the odd-numbered themes in each class, considering A as the experimental group and B as the control group. The difference in scores on the even-numbered themes was also computed, considering B as the experimental group and A as the control group. If the use of the strips was of significance there should have been a significant difference in favor of the experimental group in each case. However, this did not occur. There was no significant difference in either computation. Therefore, one must assume that, although the even-numbered themes might be more easily recognizable, there is still not significant improvement when notated examples are used in presentation. While the odd-numbered themes may have been more difficult to recognize generally, there was no significant improvement in scores when notated examples were used.

Factors Influencing Significance

It appears that although Smith's study finds notated examples of value to all college students in his experiment, they were of no significant value to fifth-grade students.[10] There are four possible factors in the comparisons of the two groups of subjects which might have influenced the difference in results between the two studies. These four factors present in the fifth grade experimental groups include: (a) possible larger variance of IQ; (b) the use of both sexes; (c) possible greater variance in knowledge of notation or musical aptitude; and (d) age and maturation. These four factors were considered separately to discover which one might have had the greatest influence.

College students may possibly have a higher average IQ than the average elementary school class. To eliminate the possibility of difference in range of IQ affecting the results of this experiment, the children with high IQ's and those with low IQ's were grouped and checked separately. Again the results showed no significant differences.

No male subjects were used in the earlier study as it was conducted at a women's college. Therefore, a statistical check was made separately of boys and girls to check the possibility of the use of boys having affected the data. However, results showed that neither boys nor girls made significant improvement in scores with the use of notated examples. Thus, it was not the inclusion of both sexes as subjects that made the difference in results between the two experiments.

The pretest for knowledge of musical notation found that all students in the experiement fell in the same low scoring range. Therefore, no separate statistical check was made for knowledge of notation. Children with high and low musical aptitude scores were grouped, and a t-test computed on their scores. Again, no significant difference was found in either case.

After eliminating the factors cited above, the only remaining possibility of difference between the results of the two experiments would be the maturation factor. It would seem that ten- and eleven-year-old children have not matured enough for the notated examples to be of any significant aid in recognizing themes.

The conclusions reached in this study appear as follows:

General Conclusions

1. There was no significant difference between the aural recognition of a theme which was presented with the aid of a notated thematic example and one which was presented without a visual aid when fifth-grade students were used as subjects.

2. The factor of intelligence had no effect upon the results of the experiment. Neither the high-IQ nor the low-IQ subjects made a significant improvement in scores when a notated strip was used in the presentation.

3. The factor of sex had no effect upon the results of the experiment. Neither the girls nor the boys made a significant improvement in scores when notated strips were used in the presentation.

4. The factor of musical aptitude had no effect upon the results of the experiment. Neither the children with a high or a low musical aptitude made any significant improvement in scores when notated strips were used in the presentation.

5. From observing the results of this experiment, it would appear that fifth-grade students have not yet reached a maturation level on which the notated strips would begin to be of value.

Two questions arise as a result of this experiment which might be considered for further research. First, at what developmental stage do notated examples begin to be of value to students? Second, does this inability by fifth grade students to relate the visual and the aural to any great degree have implications in other subject areas?

FOOTNOTES

[1] Meyer Martin Cahn, "Problems of Music Appreciation Teaching as Perceived by Students and Teachers in Northern California Colleges and Junior Colleges," unpublished Doctoral dissertation (Stanford University, 1960).

[2] Edgar H. Smith, "The Value of Notated Examples in Learning to Recognize Musical Themes Aurally," *Journal of Research in Music Education,* I (Fall 1953), 97-104.

[3] James Kilford Neely, "An Evaluation of Tests Given to Interrelate Intelligence, Aural Acuity, and Musical Achievement for Purposes of Prognosis in Ear-Training," *Council For Research in Music Education,* Bulletin 5 (Spring 1965), 51-53.

[4] See: Raleigh M. Drake, "The Effect of Ear Training on Musical Talent Scores." *Journal of Musicology, IV* (February 1945), 110-112; Edwin Gordon, "A Study to Determine the Effects of Training and Practice on Drake Musical Aptitude Test Scores," *Journal of Research in Music Education,* IX (Spring 1961), 2-6; Wolner and Pyle, "An Experiment in Individual Training of Pitch Deficient Children," *Journal of Educational Psychology,* XXIV (November 1933), 602-608; Ruth F. Wyatt, "Improvability of Pitch Discrimination," *Psychological Monographs,* LVIII (1945), 1-58.

[5] James L. Mursell, "Growth Gradient in Music," *Music Educators Journal,* 35 (January 1947), 18-19.

[6] Robert G. Petzold, "Development of Auditory Perception of Musical Sounds by Children in the First Six Grades," *Journal of Research in Music Education,* XI (Spring 1963), 21-26.

[7] Viola Bokelheide, "Some Techniques of Assessing Certain Basic Listening Skills of Eight and Nine-Year-Olds," *Council For Research in Music Education, Bulletin* 4 (Winter 1965), 70-74.

[8] Richard Colwell, "Evaluation: Its Use and Significance," *Music Educators Journal,* 49 (Feb.-Mar. 1963), 45-49.

[9] Richard Colwell, "The Theory of Expectation Applied to Music Listening," *Council For Research in Music Education, Bulletin* 5 (Spring 1965), 17-20.

[10] Smith, *loc. cit.*

RAMOS AND SOME POLEMIC THEORISTS OF THE RENAISSANCE

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(*Note*: Although a theoretical paper, the information and point of view seem especially relevant to music educators of the twentieth century. The Editor)

Every thoughtful man who hopes for the creation of a contemporary culture knows that its development hinges on a central problem — finding a coherent relation between science and the humanities. Men of the fifteenth and sixteenth centuries faced this problem no less than we face it today. Some of them, as well as we, slowly realized that their educational system was not only failing to face up to the problem but also was standing still while the world around them pushed forward with tremendous speed. As usual only a few recognized the problem and were willing to cope with it — in many cases, only to have their efforts rewarded with stones.

The Renaissance was, among other things, a time when individualism was a dominant characteristic. Speaking of the sixteenth century, Bronowski and Mazlish remark: "The ability and power of the individual — whether artist or statesman — was given great respect and perhaps exaggerated importance."[1] As man began to have more confidence in himself and less in the ability of his creator to intervene in his daily endeavors, he began to ask more questions about his world. Leonardo's interest in bone structure as well as skin color, his elaborate drawings of machinery, the nude in painting — all bear witness to this concern with what lies beneath the surface and of the individual's right to express himself.

It is a short step from the general to the specific. The learned musicians of the early Renaissance were products of educational systems deeply rooted in Greek tradition. With the Renaissance of classicism came a renewed interest in this heritage, a reactivation of the desire to re-establish Greek ideals, now given impetus by the opportunity to study actual writings rather than secondary sources. In addition there was the immigration of Greek and Arab scholars to all parts of Europe, particularly Italy, after the fall of Byzantium. Thus the Renaissance theorist tended to be a product of two forces: on the one hand, he was Greek scholar, pursuing classic ideals, repeating over and over again concepts, definitions, and supersititions like a creed, believing in the power of numbers with religious-like fervor; on the other hand, he was a revolutionary, able to see the world around him changing and anxious to be a part of this change, feeling a new, unknown power in himself, and feeling the need for expression. Leonardo may be a personification of this Renaissance enigma, but so also might be Ramos de Pareja.

Bartolome Ramos De Pareja

Ramos (*ca.*1440-*ca.*1491) was a Spaniard who lectured in Salamanca before he traveled to Bologna, possibly in anticipation of being granted a chair of music there — a position he never received.[2] In 1482 he published his *Musica practica*, a significant work not only as one of the earliest incunabula on music, but also because of the revolutionary ideas it presented. Stevenson points out that in most ways Ramos was old-fashioned rather than progressive.[3] For example, his rules of counterpoint nearly conform with those found in the *Practica musicae* (1496) of Gaforio, one of his severest critics. In his discussion of the psychological connotations of the eight church modes, he repeats authors of two centuries earlier. He feels that the various modes derive their character from various planets or the sun and moon (see Stevenson, p. 61), which accounts for the emotional effects of the various modes. He includes a discussion of *musica mundana* and is concerned with number symbolism. He delights in puzzle canons and enigmas, and he includes in his treatise a canon notated on a circular staff.

Monochord Division and Interval Ratios

But it was Ramos' efforts to simplify and faciltate the educational methods that brought about the most innovations and controversy. One important opposition to tradition was his division of the monochord[4] — although even in this respect he shows his Boethian-Pythagorean heritage. Adkins classifies his division as belonging to Pythagorean tradition among Renaissance monochord treatises[5], a position which Reese also assigns to him.[6] This tradition saw the great care for accuracy and efficiency in monochord division give way to disorganization and inefficiency in this regard.[7] Another aspect of Pythagorean tradition was the reverence for the number 10, the sum of the first four integers from which all consonances were derived — 2:1, 3:2, 4:3. Ramos declared that he is familiar with Boethius method of monochord division but feels that ". . . although this division is useful and pleasant to theorists, to singers it is laborious and difficult to understand. And since we have promised to satisfy both, we shall give a most easy division of the regular monochord."[8]

Ramos continues, revealing further the other, the Renaissance, facet of his personality:

> In the first division of our regular monochord we have said that Boethius subtly divided ours by vulgar fractions and with respect to continuous quantity in order that the student may not need first to know both arithmetic and geometry. For to require this would be to fall into the error which we have forbidden ourselves, seeing that we have said that he will need neither of these things to understand our teaching, provided he be informed in the first rudiments. Thus we have said that a string was to be divided in half, or that a quantity was to be doubled, tripled, or divided by three, expressions most familiar to everyone.[9]

These statements lend support to Strunk's ideas in the preface to this translation, that Ramos is " . . . scarcely aware of the implications of what he is advancing and claims no special virtue for his division beyond its ready intelligibility and the ease with which it is carried out."

What Ramos did was merely extend the Pythagorean system of monochord division based upon super particular prime numbers, but the result was a new tuning system, the first non-Pythagorean chromatic tuning, and ". . . the most disputed of all monochord division."[10] All consonances were classified according to the relationships that exist among the numbers 1 through 6. The Pythagorean fifth is expressed by the ratio 3:2 (or 6:4). The harmonic mean of these numbers is 5, so the thirds within the fifth have the ratio 5:4 (major), and 6:5 (minor). The whole tone is arrived at in the same manner. The major third 5:4 (or 10:8) has a mean of 9. Therefore, the whole tones exist in two sizes, 10:9 (minor) and 9:8 (major).[11] Ramos gave instructions for a chromatic division, but it is not necessary here to do more than summarize his results in order to show the nature of his innovations. The ratios of the C major scale were as follows:

10:9 9:8 16:15 9:8 10:9 9:8 16:15
c d e f g a b c

The 5:4 and 6:5 thirds were the pillars of the entire system, and to achieve them Ramos had to sacrifice the symmetry of the traditional Guidonian hexachord system. The ut-re-mi of the "C" hexachord would have to be sung differently from the ut-re-mi of the "F" hexachord — the former requiring the small whole tone, then the large, and the latter the large and then the small. In addition, although several of the fifths were acceptable, the g-d fifth and its octave were flat because of the inclusion of the two 10:9 whole tones within it. The minor thirds b-d and g-b flat were also smaller (32:27) than the 6:5 ratio of the others.

Thus Ramos revived a tetrachord division first suggested by Didymus, but he did not think of his system as a form of temperament — nor even as a new theory of proportions, but " . . . as a practical and simple division of the monochord."[12] Ramos' tuning system in many ways created more problems than it solved. It did not, for example, eliminate the Pythagorean comma (the difference between the twelfth, fifth and the seventh octave), but merely added to it the syntonic comma 81:80 (the difference between the 5:4 third and the Pythagorean third).[13]

Perhaps writers such as Riemann, Reese, and Adkins do Ramos an injustice by implying that he seemingly stumbled unknowingly into the beginning of a revolution, since the second of the three ways in which Ramos opposed musical tradition is the natural result of his tuning system. He devised a new set of solmization syllables, based on the octave rather than the sixth:

psal - li - tur per vo - ces is - tas
c d e f g a b c

"C" would be sung with either *psal* or *tas* according to whether the melody ascended or descended, but both syllables used the same vowel. The two places where a semitone might or might not occur (A-B flat, B-C) were both signaled by syllables ending in "S".[14] Octave solmization, which we take for granted now, was violently rejected by many of Ramos' contemporaries.

Ramos also broke with tradition in another way by declaring that tritones were permissible, and that succesive fifths were tolerable provided that one of the two was an imperfect fifth. Examples of such writing (even when only two parts are sounding) have been found by Stevenson in the polyphony of several Spanish composers flourishing around 1500. This portion of Ramos' theory does not bear the significance of his other innovations, since in it he is probably only reflecting what he heard in much of the music of his day. Ramos also described imitative procedures which were new at that time.

Controversy

His most radical innovations, particularly the revision of the ratios for thirds and the recommendation of a solmization system based on the octave, released a storm of protest and defense following the appearance of his *Musica practica.* Burzio protested in his pamphlet *Musices opusculum* (1487) the slur on the memory of Guido and further declared that the diatonic genera must be used because "' . . . the mother church chose from these three . . . genus.'"[15] (Incidentally, this same work of Burzio contained the first known, complete, printed part-composition).[16] Ramos' pupil Spataro supported him in the controversy and countered with an *Honesta defensia in Nic. Burtii Parmensis opusculum,* Bologna (1491), pointing out that Burzio had no conception of the most pressing problem — the necessity of equalizing the two sizes of whole tones through some kind of temperament.[17] (Apart from his controversial writings he also published a treatise on the interval of the fifth, 1531).[18]

Gaforio renewed the attack in his *Practica musicae* (1496), as did Jacobus Faber Stapulensis, a mathematician, in *Elementa musicalia* (1496) — even though he rejects the Ramos tuning for seconds and sixths for the Pythagorean ratios, he remarks: "The semiditonus (the minor third) lies between the ratios 6:5 and 7:6, although it is pleasing in sound to the ear, it is nevertheless, not to be regarded as a consonance (!) . . . The fact that a semiditone sounds pleasing to the ear is proved by one's experience in listening to musical compositions. It is not a consonance, however, because its ratio (32:27) is not super-particular . . . "[19]

"These pieces . . . together with Gaforio's *Apologia* of 1520 and Spataro's *Dilucide . . . demonstratione* of 1521 . . . show how hard it was for most theorists to bring theory in line with practice."[20] As shall be shown, the controversy was kept alive well into the sixteenth century, mainly by Spataro and Gaforio.

Gaforio

The Italian Renaissance did not want for theorists, and Gaforio 1451-1522) was one of the most distinguished of them, as witnessed y the number of times he is quoted in other treatises — includng several by Spaniards who sided with him and against their own ountryman, Ramos.[21] In the biography at the end of *De harmonia usicorum instrumentorum* (1518) Gaforio states that he engaged n public debate with Tinctorus in Naples in 1480.

> Around 1480 we find a flowering of music theory in Italy which is without comparison: in Bologna, Bartolomeo Ramis and Giovanni Spataro; in Parma, Nikolaus Burtius, pupil of the recently deceased Johannes Gallicu, and Philippus de Caserta; in Milano, Franchino Gafori; in Lucca, John Hothby; and in Naples, Tinctoris. Not only by means of debates [Gaforio and Tinctoris, for example] but also by means of heated polemical pamphlets all sorts of theoretical questions were brought closer to their solution, and foundations were laid for the last, but not least, part of music theory, the theory of harmony. This extraordinary activity in the realm of theory is obviously only a phenomenon accompanying the great upsurge which composition had been undergoing since the second third of the century and which had not yet reached its zenith.[22]

Gaforio's writings are invaluable as a contemporary account of nusical activities. He was also a scholar who had Latin translations nade for his own use of various Greek treatises, including those of ristides Quintilianus and Ptolemy.[23] His *Practica musicae* seems o contain the earliest mention of temperament, a discovery that arbour ascribes to Riemann.[24] Among his clearly-stated counteroint rules, Gaforio discusses the organists' assertion that fifths unergo a small amount of diminution, implying that some sort of emperament was common practice and may even have originated ng before. In addition, Gaforio was a prolific composer and editor; he so-called Gaforio codices contain sacred compositions of his and ther composers active in Milan. Gaforio's style, according to Reese, ppears to be influenced by Dufay and Josquin, but contains an lement of harmonic boldness.[25]

As we have seen, Ramos willingly sacrificed a fourth and fifth n order to obtain three major thirds in the 5:4 ratio, three minor hirds in the 6:5 ratio, and all diatonic semitones in the 16:15 ratio. 'his sacrifice the Pythagoreans such as Gaforio, whom Ramos reerred to as *Guidonis sequaces*,[26] were willing to make.

The Controversy Continues

In the second and third decades of the sixteenth century, the ontroversy intensified. Gaforio published *De harmonia musicorum nstrumentorum*, in which he discussed chordal formations, referred o the 4th, 5th, and octave as "natural" consonances, and 3rds and

6ths and their compounds as "irrational" consonances (c.f. previous quote from Faber). He also understood Ramos and spoke of a division of the two-octave system into 24 equal parts, with twelve equal semi-tones within the octave — although he does not seem to agree with the proposal. He accomplished such a division by tuning the intervals 3:2, 4:3, 5:4, 6:5, 5:3, 8:5, but he disputed the correctness of them.[27] It is interesting to note that Adkins, who closely examined a number of monochord treatises, states that although Gaforio used a Pythagorean division, he showed a general lack of acquaintance with the technique, and his efforts were rather clumsy.[28]

The most interesting account in English[29] of subsequent events seems to be by Hawkins.[30] It is known that Gaforio was not afraid to voice his beliefs, and he had ample opportunity to do so, not only with publications but also from the lectern. The 1518 work further antagonized Spataro, who defended his former teacher in a small tract, *Utile et breve regule de canto*, as well as in several letters to Gaforio prior to 1520.

In that year Gaforio, nearly 70 years old, published *Apologia Franchini Gafuri musici adversus Joannem Spatarium et complicea Musici Bononienses*, in which he replied to accusations of gross ignorance and vanity that had been thrown at him, not only by Spataro but also by others — including Aron. The cause of the controversy was not only Ramos's monochord division and his recommendations concerning solmization by the octave, but some aspects of mensural notation as well. The battle was carried on by Spataro with the publication in 1531 (nine years after Gaforio's death) of *Tractato di musica*.

Hawkins does not hide his admiration for Gaforio, and feels that the attacks upon him were prompted more by jealousy of Gaforio's exalted position than for any other reason.[31] At any rate, neither adversary can be commended for his gentlemanly use of language.

> To speak in the mildest terms of Spataro's book it is from beginning to end a libel on his adversary, who was a man of learning and integrity; and nothing but the manners of the age in which he lived, in which the style of controversy was in general as coarse as envy and malice could dictate, can excuse the terms he has chosen to make use of; and to say the truth, the defence of Franchinus [Gaforio] stands in need of some such apology, for he has not scrupled to retort the charge of ignorance and arrogance in terms that indicate a radical contempt of his opponent.[32]

Later Hawkins includes a translation of a portion of Gaforio's *Apologai . . .* from which we need to quote but a few lines:

> You, Spartarius, who are used to speak ill of others, have given occasion to be spoken against yourself, by falling with such madness on my lucubrations, though your attack has turned out to my honour. Your ignorance is scarce

> worth reprehension; but you are grown so insolent, that unless your petulance be chastised, you will prefer yourself before all others, and impute my silence to fear and ignorance. I shall now make public your folly which I have so long concealed . . .[33]

We look in vain for such colorful language in the *Journal of the American Musicological Society!*

Innovations Gradually Accepted

Spataro and Ramos had their defenders as well as their adversaries. Aron was a friend of Spataro, and his *Thoscanello in musica* (1523) is one of the most significant treatises before Zarlino.[34] The many subjects dealt with include the first explanation of meantone tuning, and with pure (5:4, 6:5) thirds, but with the fifths flattened by one quarter of the syntonic comma.[35]

Fogliani adopted Ramos' system of tuning in his *Musica theorica* and improved upon it. He advocated two "d's" and two "b flats," but was willing to compromise with a mean tuning for each of these notes.[36]

Vicentino, perhaps the most controversial figure of the time, carried chromatic tuning to such an extreme that he suggested dividing the octave into thirty-one parts, and built two instruments to demonstrate his proposals. For his effort he became involved in a controversy that resulted most probably in more personal consequences than were suffered by either Ramos or Spataro — a controversy[37] that makes as interesting reading as the one we are presently concerned with.

A radical Netherlands composer, theorist, and editor by the name of Waelrant (b. 1519) advocated solmization by the octave rather than by the hexachord. It is known that he visited Italy during the third or fourth decade of the sixteenth century, and Lowinsky feels that he was probably much interested in the furor that was still generating around the revolutionary ideas of Ramos and his followers.[38]

Finally, Zarlino further developed Ramos' innovations and in spite of even more venomous attacks the new teachings gradually became accepted. The Pythagorean tuning system eventually was replaced, first in practice and finally in theory. The concepts of consonance and dissonance gradually changed. "Consonance" no longer denoted relationships that could be shown with combinations of the numbers 1 to 4, and "dissonance" all other combinations of notes. Consonance as we know it came to be associated with "pleasure" and/or "relaxation", and dissonance with "displeasure" or "tension."

Ramos did not advocate equal temperament, as some have suggested, but to paraphrase Barbour, he is, as the first of the innovators and reformers, " . . . worthy of respect accordingly."[39] The controversy he started — knowingly or unknowingly — outlived all of the original protagonists, but he participated in the beginning of an age when men had faith in themselves and believed their world to be better than the preceding one — an age that would see the almost complete revision of all knowledge.

FOOTNOTES

1. J. Bronowski and Bruce Mazlish, *The Western Intellectual Tradition* (New York: Harper, 1961), 35.
2. Nicolas Slonimsky, ed., *Baker's Biographical Dictionary of Musicians*, 5th ed. (New York: G. Schirmer, 1958), 1305f.
3. Robert Stevenson, *Spanish Music in the Age of Columbus* (The Hague: Nijhoff, 1960), 56ff.
4. Monochord — a device or instrument consisting of a single string stretched over a wooden resonator. It included a moveable bridge so that the length of the vibrating portion of the string could be varied. The monochord was widely used in ancient Greece and in the Middle Ages to explore and demonstrate the laws of musical acoustics.
5. Cecil Adkins, *The Theory and Practice of the Monochord* (Ph.D. dissert., State University of Iowa, 1963), 199.
6. Gustave Reese, *Music of the Renaissance*, 2nd ed. (New York: W. W. Norton, 1959), 586.
7. Adkins, *loc. cit.*, 199.
8. Ramos, from "Musica practica," *Source Readings in Music History*, ed. by Oliver Strunk (New York: W. W. Norton, 1950), 200-204.
9. *Ibid.*
10. Adkins, *op cit.*, 243.
11. The above figures and those that follow represent a condensation of material in J. Murray Barbour, *Tuning and Temperament* (East Lansing: Michgan State College Press, 1951).
12. Hugo Riemann, *History of Music Theory . . .*, trans. by Raymond Haggh (Lincoln: University of Nebraska Press, 1962), 393.
13. *Ibid.*, 282f.
14. Stevenson, *op. cit.*, 55ff
15. Edward Lowinsky, *The Secret Chromatic Art in the Netherlands Motet*, trans. by Carl Buchman (New York: Columbia University Press, 1946), 112.
16. Reese, *op. cit.*, 155.
17. Riemann-Haggh, *op. cit.*, 282f.
18. E. van der Straeten, "Spataro," *Grove's Dictionary of Music and Musicians*, 5th ed., 10 vols., ed. Eric Blom (London: Macmillan & Co., 1954-61), VIII, 235.
19. Riemann-Haggh, *op. cit.*, 283.
20. Reese, *op. cit.*, 586f.
21. Stevenson, *op. cit.*. 50-101, contains a resume of Spanish musical thought from 1410-1535.
22. Riemann-Haggh, *op. cit.*, 273.
23. Reese, *op. cit.*, 178ff.
24. Barbour, *op. cit.*, 25.

25. **Reese, *loc cit.*, which also contains a good survey of Gaforio's precepts. His theoretical output is also thoroughly discussed in**
Riemann-Haggh, *op. cit.*, 284ff. The codices are discussed by Knud Jeppesen, "Die 3 Gafurius-Kodizes der Fabbrica del Duomo, Milano," *Acta Musicologica* III (1931), 14ff.
26. **Stevenson, *op. cit.*, 76f.**
27. Hiemann-Haggh, *op. cit.*, 284ff (also contains translated excerpts taken from *De harmonia . . .*).
28. Adkins. *op cit.*, 199.
29. Giov. Spataro, *Dilucide et probotissime demonstratione . . . contra certe frivole et vane excusatione da Franchino Gafurio (maestro de li errori) in aducte* (1521), *ed. by Johannes Wolf*, 1925, contains a German translation as well as a facsimile of the original, with comments on the controversy.
Knud Jeppesen, "Eine musiktheoretische Korrespondenz des fruheren Cinque cento," *Acta Musicologica* XIII (1941), 3ff, discusses, in German, letters exchanged between Spataro and others.
30. John Hawkins, *A General History of the Science and Practice of Music*, new ed., 3 Vols (London: Novello, 1853), I. 288ff.
31. *Ibid.*
32. *Ibid.*
33. *Ibid.*
34. Strunk, *op. cit.*, 205.
35. Reese, *op. cit.*, 530ff.
36. Barbour, *op. cit.*, 108.
37. For good discussion of this controversy, as well as partial translations of selected writings of Vicentino, see:
Henry Kaufman, "Vicentino's Archiorgano, an annotated translation," *Journal of Music Theory* V (1961), 32-53.
Henry Kaufman, "Vicentino and the Greek Genera," *American Musicological Society Journal* XVI (Summer, 1953), 325-46.
Vicentino, *L'antica musica ridotta alla moderna practica*, 1955, facs. ed., ed. by Edward Lowinsky (New York: Barenreiter, 1959).
Robert Wienpahl, "Zarlino, the Senario, and Tonality," *American Musicological Society Journal* XII/1 (Spring, 1959), 27-41.
38. Lowinsky, *op. cit.*, 70.
39. Barbour, *op. cit.*, 4.

INDIVIDUALIZED INSTRUCTION FOR GENERAL MUSIC CLASSES INVOLVING THE USE OF SLIDES PROJECTED IN SYNCHRONIZATION WITH PRERECORDED TAPE

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The camera enthusiast and the hi-fi hobbyist both know how simply one can prepare a professional-appearing 35 mm. slide show by prerecording comments and sound effects on one channel of a stereophonic tape recorder and recording sixty cycle beeps at appropriate points on the second (right hand) track, which activate the cycling mechanism of the slide projector. This relatively inexpensive system seemed worth exploring as a possible means of providing individualized instruction for General Music classes. The author was the recipient of a grant from the Missouri Arts Council to acquire the equipment necessary to develop the project. Equipment purchased (frequently already available in public schools) was as follows:

1. A stereophonic tape recorder and playback unit	$175.00
2. A carousel type 35 mm. 2x2 slide projector with remote control mechanism	$105.00
3. A sound synchronizer mechanism. (available at photography supply outlets)	$ 28.00

A 35 mm. camera was already available. The Arts Council also provided some additional funds for assistance of a professional photographer, something which would most often not be needed for similar projects, depending on the nature of the photos desired and the photograph skill of the teacher or student preparing the program.

The sequence in preparing the program is as follows:

1. Writing of the script, including all cueing of audio and video effects (see sample script below)
2. Taking and developing of the 35 mm. transparency slides.
3. Placing the slides in the carousel in the proper order.
4. Recording the audio portion of the program, including music, special sound effects, and spoken commentary while pressing the button of the remote control device, plugged into the synchronizer, at the appropriate times to record the 60 cycle beep which will automatically change, or cycle, the carousel.

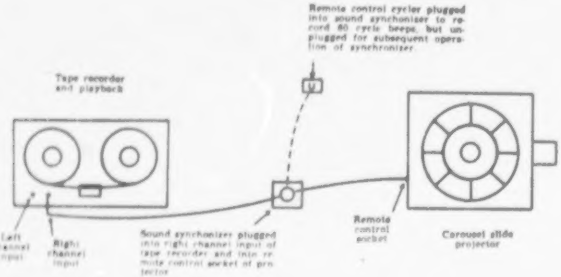
The resulting program can be used by individual students, by small groups, or even an entire class, but its primary purpose is thought to be to provide individual instruction to stimulate subsequent class room discussion and learning.

Principal features of this teaching device appear to be:

1. High degree of stimulation afforded students through audio and visual means.

2. **Relative ease and economy in time and money in preparing programs especially designed for a particular group of students and a particular curriculum.**
3. Potential for students to design and record their own programs.

The diagram below explains the procedure in the synchronization process:


Remote control cycler plugged into sound synchoniser to record 60 cycle beeps, but unplugged for subsequent operation of synchroniser
Tape recorder and playback
Left channel input
Right channel input
Sound synchonizer plugged into right channel input of tape recorder and into remote control socket of projector
Remote control socket
Carousel slide projector

(N.B. A piece of equipment which contains all of the features included in the units diagrammed above, but possessing the advantage of being completely self contained and portable is available for about $500.00 from firms specializing in audio-visual devices.)

The script which follows is perhaps somewhat more elaborately prepared in terms of precise timing than is necessary for most programs; it is included here as a sample of the kind of preparation desirable in preparing a program.
Procedure for set up:

1. Remove carousel projector from packing box. Also remove power cord and connect to projector (in back) and to wall receptacle. Point projector toward screen or light colored wall 10 to 20 feet away.

2. Remove front of tape recorder. Open access door on rear. Extend power cord and connect to wall receptacle. Remove sound synchronizer from access door. Connect long wire of synchronizer to terminal on front of tape recorder labeled Ext. Sp. Connect short wire of synchronizer to back of projector.

3. Place reel of tape on left spindle of tape recorder. Place empty reel on right spindle. BE CERTAIN THAT THE NUMBER "I" CAN BE SEEN ON BOTH REELS. Thread tape through slot in center of the machine and up to the outside of the empty reel.

4. Remove carousel type tray which holds slides from packing box. Place it on top of the projector. BE CERTAIN THAT GUIDE SLOT ON BOTTOM OF TRAY ALIGNS WITH GUIDE ON PROJECTOR. The number 0 should appear adjacent to indicator arrow.

5. Turn power switch on tape recorder to on position. Put machine in play position and leave machine in play until all of the white tape has wound on empty reel and darker tape appears. AS

SOON AS DARKER TAPE RUNS ON TO EMPTY REEL STOP MACHINE WITH SAME LEVER THAT IT WAS STARTED. Depress counter reset button.

6. Turn power switch on back of projector to on position. (There is a low and high intensity position. Use the one which works best in your room.)

7. Focusing knob located above and to one side of lens should now be turned to focus slide 0 as clearly as possible. Experiment until the focus slide 0 is completely clear and easy to read.

8. Equipment is now ready to use. Control is done by moving play lever down to begin lecture and returning it to stop at the end. Tape should be rewound so that counter again reads 0. Machine is now ready for re-operation.

Recorded Lesson One
Introduction to Twentieth Century Music

Title: Music in Society

Audio Effects	*Time*	*Script*	*Visual*	*Time*	*Position*
1. Rock dance	0"		1. Rock dance	0"	1
2. Str. Qrt. tuning	12"		2. Str. Qrt.	12"	2
3. Voladores	22"		3. Voladores	22"	3
4. Applause	33"		4. Hands	33"	4
5. Haydn minuet str. qrt.	41"		5. Str. Qrt. 2	41"	5
6. Hammering	51"		6. Man hammering	51"	6
7. Gregorian chant	57"		7. Illuminated ms.	57"	7
8. Piano composition	1'11"		8. Pianist	1'11"	8
		1'25" How much of what you just saw and heard is music? Did you like it? All of it? Part of it? What did it *mean*? Was it easier to put yourself in one "scene" than another?			9 blank
9. Rock dance (#1)	1'41"		9. Rock dance #1	1'41"	10
		1"54 The sound of the string quartet tuning might be familiar . . .			11 blank
10. Str. Qrt.	2'3"		10. Str. Qrt. (#2)	2'3"	12
		Is it music? Does it refer to music? And the applause you heard? . . and the			13 Blank

Audio Effects	*Time*	*Script*	*Visual*	*Time*	*Position*
		so called primitive music of a Mexican flutist perched on a high pole playing for a religious ceremony . . . ?			
11. Voladores (3)	2'31"		11. Voladores (#3)	2'31"	14
2'41"		Is the music of the string quartet *better* than the Mexican Voladore music? . . . is the music of the string quartet *better* or poorer than the Rock dance music? Which do you prefer? Is it a matter of appropriateness? Is one *performance* bettter than another? What is the music for? What does it *mean*?			
12. Hammering	3'41"	How about the man hammering?	12. Hammering	3'4"	15
	3'50"	Can this conceivably be music or even refer to music?	13. Man in tails Girl in formal	3'55"	16
	4'6"	One set of clothing is considered appropriate for one occasion. The other for another, although some parents don't think the latter appropriate for anything . . .	14. Same man and girl in "beat" attire		17
			15. 20th C. score	4'16"	18
		So what has all this to do with twentieth century music, or any kind of music? That's what we are supposed to be talking about . . . Now, if you think music is just this . . .			
13. Rock Dance (#1)	4'28" 4'44"		16. Rock Dance (#1)	4'28"	19
14. Str. Qrt. Haydn	4'44"	or just that . . .	17. Str. Qrt. (#2)	4'40"	20
	4'54"	Or just any one thing, you may have to do a bit of rethinking. Music is not			

Audio Effects	*Time*	*Script*	*Visual*	*Time*	*Position*
		just a string quartet with you sitting there, all dressed up, quietly listening.			
		On the other hand, music can be and often is in the 20th Century a rejoining of many experiences which have frequently been separated in the Western world since medieval days.			
	5'57"	In many parts of the world through history, it has been unthinkable to separate playing, singing, poetry, dancing, acting . . .			21
		In *some* twentieth century music we are returning to that conception, the joining together of several forms of expression into one. But *sound*, and its opposite, *silence*, remain central.			
		And many sounds which have not been admissable as music in the western world, are now admissable . . . even, possibly . . .			
15. Hammering (#6)	6'05"		19. Hammering #6	6'05"	22 23
	6'10"	In fact, the word music has become very difficult to pin down. We can define it, perhaps, as: "Sound and silence organized in some way, in some environment." But that doesn't really say very much. It merely seems to suggest that music involves sound homehow or other . . . very inadequate, and it leaves out anything about good, better, bad, worse . . .			
		There are standards for making judgments which of course, keep changing and are different in different parts of the world, just as standards of dress, of morality, of speech, always have. *We ourselves make the standards.*			
		Then there is the matter of appropriateness. "I ain't going" may say it more clearly than "I do not choose to go" under certain circumstances.			

Audio Effects	*Time*	*Script*	*Visual*	*Time*	*Position*
		In other words, the rules of grammar are not the same for all places.			
		This . . .			
16. Rock (#1)	7'23"				
	7'33"	is more appropriate for this.			
			21. Rock #1	7'35"	24
		than this			
17. Qrt. Haydn minuet (#5) 4'50"	7'40" 7'50"		22. Str. Qrt. #2	7'40"	25
		even though they are both dance music.			
	8'0"	Another way of defining music is to say that it is a way of behaving with organized sound and silence in a particular environment. This seems almost to equate music with politics, a baseball game, a church service, a war, the construction of a house, placing the emphasis as it does on a manner of behaving.		8'0"	26
		If it does suggest this, you are on the right track.			
		All of these are human ways of behaving which involve rules or modes of behavior.			
	9'15"		24. Chess Board	9'15"	27
		. . . which the participants make up and change even as they participate in an effort to make things work better, or differently, or more interestingly,			
			man and woman		28
		A study of *tradition* would appear to be a study of the way man *changes* his rules of behavior. (This may put the emphasis differently than you have believed correct regarding *tradition*).			
		A skillful, or good, politician is one who konws thoroughly the rules and contemporary modes of political behavior, and can act on them with great expertise.			
	10'25"		25 Baseball Game	10'25"	29
		A good baseball *player* is one who knows			

Audio Effects	*Time*	*Script*	*Visual*	*Time*	*Position*
		the contemporary rules of baseball (Yes, they change too) and how to act on them with skill. A good baseball *game* is the result of a workable set of rules plus expert players.			
18. Flute Music	10'45"		26. Flutist	10'45"	30
	10'57"	. . . a good flutist . . . . . . a good piece of music for flute . . . Get the idea? . . .			
	11'07"	Umpires, pitchers, spectators, everyone at a baseball game who really participates has to share in an understanding of the rules and ways of behavior. The rules for music and about music are just as man-made as are the rules or customs for behaving in a classroom . . . The rules concerning how you propose to a girl . . .			31 baseball
19. Here comes the Bride — organ	12'06"		27 Kneeling man Victorian dress	12'06"	32
	12"13"	and we keep changing them all			
			28. Chess board #24	12'18"	33
	12'18"	So we keep making and learning new rules. This does not mean that the new rules or ways of behaving are unrelated to the older ways. Usually new ways and rules are modifications of the old ones. Nor does it mean that new ways are either better or worse than the old ones. They are just different.			
20. Str. Qrt. Haydn minuet #3	12'42"		29. Str. Qrt.	#2-12'42"	35
21. Electronic Sounds	12'51"		30. Electronic console	12'51"	36
	13'05"	For example, you are going to discover that the Haydn Quartet and the music produced by electronic means are just as different as one would expect something to be, made by men living almost two hundred years apart: the rules have changed and they continue to change but that doesn't mean that the older and the newer are unrelated.			

Audio Effects	*Time*	*Script*	*Visual*	*Time*	*Position*
22. Horses	13'31"		31. Stage coach	13'31"	37
23. Auto race sounds doppler effect	13'43"		32. Sports car	13'43"	38
			33. Two scores 20th C. and traditional	13'56"	39
	13'56"	So we will attempt a very general definition of music which should encompass twentieth century music and all kinds of music everywhere, whether it be church music, rock and roll, or whatever. Later in other lessons, we will be more specific about different types of music.			
	14'20"	"Music is the science and the art of using and arranging sound and its opposite, silence, in ways and situations where it will have (similar) meaning to everyone who participates in the experience. Visual and other experiences may be joined with aural experiences as an integral part of music."	33a. definition	14'20"	40
24. Chinese Classical Opera	14'46"		34. Chinese Opera Scene	14'46"	41
	15'02"	This seems to suggest for example, that if you have never been to a presentation of classical Chinese opera, it would *not* at first be music for you but would be for someone else who had experience and understanding of this style and later it might become music for you.			
25. "Virgen de	15'30"		35. Bull Fight	15'30"	42
	15'46"	A bullfight may well appear to many people north of the Mexican border as the silliest and cruellest kind of butchery (or it did until Hemingway started explaining it). Perhaps this is not an altogether fair analogy because sound and rhythm arrangements may all by themselves occasionally have a more innate, direct appeal without any prior preparation. Yet this so called direct, un-			

schooled reaction may well be just as misleading as are the responses of the novice to the gestures and ritual of the bull fight, i.e. its style.

36. Two Scores #33 16'57" 43

16'57" "During the next lessons, you will learn enough about music to consider yourself, not an expert, but reasonably well informed about twentieth century music as well as other music. Of course, different people will bring varying sets of information and feelings about music which have been already learned. You won't all turn out like peas from the same pod.

17'0" You will start to make value judgments . . . "this piece is better written or performed than that one . . . " In this respect your judgments will probably agree with those of your equally well and similarly informed friends. But you may not agree on such a statement as this, "I *like* this piece better." or "This piece makes me *feel* thus and so." Yet you may have a tendency to approach agreement even here. People who learn the same or similar sets of rules or style symbols are inclined to be in agreement at least about how well they are being followed or applied. It will be possible to reach an agreement on what a particular piece of music *means,* but often very difficult to put into words. (Music as we have defined it, is not a language comparable to French or English. Its meanings can be just as real but different from those imparted by words. Certain kinds of music may, of course, include the use of words, too.)

18'14" You may even agree on such a statement as this: "This piece is prettier, or uglier, than the other one" although these terms often have little to do with twentieth century music, i.e. they are irrelevant.

26. Cons. and diss. chords Piano 18'26"

Audio Effects *Time* *Script* *Visual* *Time* *Position*

27. Man hammering #6 **18'44"**

18'50" If you hold such opinions, they will almost *certainly not* be the same as those held by someone living a hundred years ago, or even quite possible, not the same as your parents' opinions. All meaning, all beauty, all humor, sadness, everything in music is created by the human participants. We are not born with musical opinions; we learn them. No music is meaningful, great, good, bad, ugly, beautiful, until it is thought and believed to be so.

20'9" In this lesson we have asked almost as many questions as we have answered and in some respects this will continue to be so.

Although you will be learning about twentieth century music we cannot confine ourselves to studying just our own century; you can easily understand why by now.

The materials of *sound* and *silence* are used in all music and are the basic elements. We are about to examine them in a manner which will be applicable to all kinds of music . . .

Audio Effects	Time	Visual	Position
28. Rock #1	21'6"	37. Rock Dance #1	44
29. Str. Qrt. tuning #2	21'18"	38. St. Art #2	45
30. Voladores #3	21'31"	39. Voladores #3	46
31. Applause #4	21'31"	40. Applause #4	47
32. Haydn Minuet Str. Qrt. #5	21'55"	41. Str. Qrt. #2	48
33. Hammering #6	22'05"	42. Man hammering #6	49
34. Gregorian Chant #7	22'10"	43. Illus. ms. #7	50
35. Piano Composition #8	22'21"	44. Pianist #8	51

22'36" You have now heard recorded Lesson One. In twenty seconds you will hear a beep tone, your signal to turn your lesson manual to page———.

Turn to page ———.

Audio Effects	*Time*	*Script*	*Visual*	*Time*	*Position*
Beep	22'56"	This tape is now almost completed. When you hear the next and final beep tone, stop the machine by pushing button—— the same one with which you started it. Look at page—— as soon as you have stopped the machine and follow the printed instructions.			
Beep	23'14"				
	24'0"	STOP THE MACHINE			

Students Manual

1. The questions on P............ of this manual are for your use in determining whether or not you have learned the essential material in recorded lesson one and are ready to proceed to recorded lesson two.

2. Questions 1 to 15 are factual questions which are to be answered true or false. They are, of course, based on the information in recorded lesson one. The correct answers appear on P............ of this manual. A short explanation for the correct answer appears with each answer.

3. Put your finger in the manual at page .... so that you can flip readily back and forth from page .... to page ....

4. Check your answer directly after answering each question by reading the proper answer and explanation.

5. Note that if you make a wrong response (answer) you are directed to ....

6. Questions 16-20 are questions which are not answered in the manual and are designed to help you think through the content of recorded lesson one and discuss it in class.

7. Now turn to question I, etc.

Student Manual For Recorded Lesson One

Introduction to Twentieth Century Music

Factual (true — false) questions numbers 1-15

1. Twentieth century music is totally unrelated to music of the nineteenth century.

2. Twentieth century music may include sounds other than those made by human voices or instruments of the band or orchestra.

3. In order to understand twentieth century music, it is necessary to have some comprehension of musical styles of other periods.

4. Sounds and silence are both basic musical elements.

5. Twentieth century composers have eliminated dance, drama, or other visual effects as part of twentieth century music.

6. Music can be regarded as a human manner of behavior comparable to politics or baseball.

7. Music is best regarded as something so specialized and mysterious that only a few especially gifted people can enjoy and understand it.

8. There are rules regarding the composition, performance and the participation in music just as there are for a game such as chess.

9. The study of traditions reveals that human nature and human behavior are unchanging throughout the history of mankind.

10. According to the definition of music given in this lesson, a particular arrangement of sound and silence might be musical to one person but unmusical to another.

11. People are born with certain musical preferences that remain largely unchanged by their environments during their lifetime.

12. Lesson one makes the point that so-called primitive music is clearly inferior to modern European or American music.

13. The set of attitudes you now hold regarding music will in no way effect the attitudes you will have when you have completed this series of lessons.

14. "Good" music is "good" no matter when or where or by whom it might be heard.

15. According to the definition of music given in this lesson, one might logically assume that "music is a universal language".

Questions For Class Discussion

16. Which statement do you think is most nearly true?
   a. This lesson is a reflection of the old saying "art for Art's sake"
   b. Music is the servant of man

17. Do you think that the content of lesson one represents what might be called a
   a. sociological approach to music and the arts, or
   b. platonic approach to music and arts.

18. Discuss the following statement: "Beethoven's Fifth Symphony is a great work of art; it always will be no matter how mankind may regard it at any particular time."

19. Do you think that it demeans music to compare it to a baseball game or a bull fight?

20. Schopenhauer, the great philosopher, once said "The composer reveals the inmose essence of the world . . . which relatively few people are capable of understanding." . . . "The less the composer is contaminated by the demands of his audience the more faithful he can be toward his mission." Do you think that quotation is a fair summary of the philosophy underlying the content of lesson one?

Answers to questions 1-15.

1. F
2. T
3. T
4. T
5. F
6. T
7. F
8. T
9. F
10. T
11. F
12. F
13. F
14. F
15. F

Glossary of Terms Used in Recorded Lesson One

(for class discussion)

Integral
Style
Science and Art
Participate
Analogy
Inate
Ritual
Value Judgments
Style Symbols
Irrelevant
Meaning
Basic Elements
Aural

PILOT EXPERIMENTAL PROGRAMS FOR DEVELOPING HIGH SCHOOL ENSEMBLE MUSIC CLASSES (BAND, ORCHESTRA, CHORUS) INTO COURSES REPRESENTING AN ACADEMIC DISCIPLINE

Alfred W. Bleckschmidt,
Missouri State Department of Education
P. J. Newell, Jr., Assistant Commissioner,
Missouri State Department of Education

(The proposal by Mr. Bleckschmidt and Mr. Newell will be operational on an experimental basis in selected schools of Missouri starting with the fall semester, 1968). The Editor

The image of high school ensemble music classes (band, orchestra, and chorus) is presently one primarily related to public performance. The existing instructional approach is almost totally directed toward achieving technical proficiency. Because of this stress upon technical skill, the secondary music curriculum generally gives only limited consideration to the *academic* phase of music instruction.

It is proposed that high school music teachers give consideration to developing music courses in band, orchestra, and chorus consisting of an *academic discipline,* these courses to be developed on an experimental basis. Just how such experimental course would be developed will in some degree be left to local discretion. The primary objective will in all cases give preeminence to *subject matter* covered in the *academic* phase of music instruction as well as *time allotment,* to the extent the music classes would unquestionably be organized and presented as an *academic discipline.*

The instructional program for a high school class in band, orchestra, or chorus developed to be an academic discipline would consist of the following:

I. *A well-developed curriculum.* The curriculum would consist of (1) Carefully selected *music* to be covered through ensemble study and performance, (2) *Academic study* related to the music being performed.

II. *An appropriate class schedule.* There are numerous ways a course as an academic discipline could be organized and presented. A sample weekly schedule for implementing such a program may consist of the following pattern:

   A. Monday. No instruments, no choral performance. The instructional program would consist of a study of the *Structure of Music.* This would include a study of music theory, music form, music analysis, and other interrelated areas. This instructional period would be related to the music literature found in the students band, orchestra, or choral folders.

B. Tuesday. Regular band, orchestra, or choral classes meet. The primary objective would be the implementation of knowledge gained on Monday as related to the music in the students' folders which the students would be expected to play or sing.

C. Wednesday. Groups would meet as academic classes. Instruments would remain at home. The Wednesday class session would consist of an instructional program of *Music Appreciation*. This could take many forms, but would primarily be organized to acquaint the students with many great works of the masters and especially works related to the music laterature found in the students' folders.

D. Thursday. The groups would meet as conventional performing ensembles. The rehearsal period should always be related to the previous Monday and Wednesday sessions.

E. Friday. Groups would meet as academic classes. The instructional program would be directed toward *Music History*. Again, the historical findings would be related to the music literature found in the students' folders.

Instead of being responsible only for the technical proficiency of performing a set of music in a folder, the student will have in addition, textbooks for instructional purposes and be subjected to a testing program covering several areas of music. The above pattern encompasses three academic areas and one in performance. This, of course, may vary in accordance with local planning. The students would be expected to spend at least one hour daily in study and preparation.

The title of the course may be "Band Fundamentals," "Choral Musicianship," or some similar title to distinguish it from the conventional band, orchestra, or choral classes.

Only those schools requesting the privilege of offering such a pilot course on an experimental basis will be considered. Presently only the larger AAA school systems maintaining superior programs of music supervision will be considered in this initial program of experimentation. Approvals will be on a one year basis subject to intensive review before approval is extended. Approvals will not be granted until the schools interested in developing such a pilot program do the following:

I. Present a well-developed curriculum showing the interdisciplinary approach of music learning as an *academic discipline* related to music performance.

II. Show evidence of planning to include sequential aspects to cover more than one year — at least two years and possibly three. (Academic classes are expected to master a body of knowledge in one year and proceed to an advanced body of knowledge the following year. The same principle must be followed in planning music courses of this nature.

Approved music experimental courses clearly evident of being an academic discipline shall carry one unit of high school credit.

Note: The present policy concerning the number of credits in music courses a student may apply toward meeting high school graduation requirements shall remain in effect. No more than four of the total of seventeen units for graduation may be in music (no more than two in vocal nor two in instrumental). Students earning more than the seventeen units of credit for graduation may earn some or all of the additional units in music.

This interdisciplinary type of program will in no way affect schools desiring to maintain their traditional band, orchestra, and choral programs. The traditional programs will continue to allow one-half unit of credit for five class meetings per week and one-fourth unit of credit for three class meetings per week.

When the pilot programs have existed a sufficient length of time to establish definite objectives, have developed proven procedures and formulated acceptable evaluative criteria, the State Department of Education will assist in developing a state-wide curriculum guide related to music ensemble instruction as an academic discipline.

AN INTRODUCTION TO MUSIC LITERATURE

Ed.D. Dissertation. Washington University 1967
William Seymour, University of New Mexico

Reviewed by Jerry Galloway, Parkway Public Schools

An Introduction to Music Literature is a two volume work written to be used as a textbook in general music classes at the ninth grade level. Volume I is designated *Student's Book* and includes most of the material to be presented in the class. Volume II, the *Teacher's Manual*, contains suggestions for teaching the material found in the *Student's Book* and suggests related musical experiences in listening, singing, and creative activities.

It is refreshing to find a general music textbook which dares to deviate from the security of the usual chronological approach. It is also encouraging to note the absence of biographical trivia which so generously pads most general music texts. The author, through his approach, places major emphasis on the music itself rather than on the lives of composers. As a result, the activities for the students become more meaningful.

Music literature has been organized into six principal divisions. The divisions are entitled, "Art Music and the Art Song," "Solo Instrumental Music," "Sacred Vocal Ensemble Music," "Opera and Secular Vocal Ensemble Music," "Music for Large Instrumental Groups," and "Chamber Music." In addition, there is an introductory chapter on folk music and a concluding chapter dealing with the modern music which does not fall into the six major divisions.

Each chapter traces the literature in that division chronologically from the earliest significant examples through the major periods of music history including the twentieth century. Thus the origin and evolution of types of compositions, compositional techniques, style, and performance practices within a given performance medium become more readily apparent and their development is more easily followed.

The format is good. There are abundant musical examples and a most beneficial glossary of terms as well as informative appendices. A partial summary concludes each part of a chapter and a complete summary at the end of each chapter reviews the new material in that chapter and attempts to relate it to previous chapters. Although the summaries are beneficial, they are weakened by the introduction of new material. The *Student's Book* contains marginal entries for quick reference and as an aid to organizing the material. The author includes "aside" comments and suggestions to call special attention to certain points or to aid the student in recalling some facet of a previous discussion.

Included, also, are "Musicharts" which serve as visual aids for assisting the student in understanding the material he has read. The charts are not totally effective, however, because the data is vague and items are often included which have no explanation in the text.

Assignments and theme topics are suggested. It appears that most of the assignments require rote memory of the material and allow little opportunity for inductive thinking or reasoning. They and the theme topics presume more musical knowledge than the ninth grade student will possess.

The vocabulary employed throughout is rather mature for a class of average ninth graders.

While the text is informative, it cannot be termed interesting reading for a general music class because in the final analysis, the author resorts to a large accumulation of facts and terms defined. It would require an intensly imaginative and exceptionally creative teacher to maintain the interest of the students using this text and to supplement it in such a way that it would create enthusiasm for music in the classroom. It would seem that the *Student's Book* might be used effectively as a teacher's reference manual.

It is, of course, impossible in a broad survey of this type to include even every major composer and his work and every facet of every performance medium. However, the following omissions are regrettable: the work of Richard Strauss and Faure from the chapter on "Art Music and the Art Song"; more detailed discussion of solo sonatas for instruments other than keyboard from the chapter on "Solo Instrumental Music"; the operas of Verdi from the chapter entitled "Opera and Secular Vocal Ensemble"; and the symphonies of Brahms and Mahler from the chapter on "Music for Large Instrumental Groups."

The suggested lists for listening would be more beneficial if expanded and if specific references were made to the movement or portion of the movement which illustrates the point the author is making.

A class taught using Mr. Seymour's plan could be an exciting one in the hands of an expert teacher. After all, the business of the general music class is not to teach history or to study the lives of great men. The purpose is to focus on the music. There is no doubt that the author has this purpose clearly in mind.

TEACHING MUSICAL STYLE AND FORM TO ELEMENTARY SCHOOL CHILDREN THROUGH THE PERCEPTION OF MUSICAL DIMENSIONS

Ed.D. Dissertation. Washington University 1967
Robert Neidlinger, St. Louis University

Reviewed by F. Bion McCurry, Southwest Missouri State College

Review

Dr. Neidlinger's study is based on his assumption that many present day music educators are teaching to their students musical concepts which are not universally applicable to the music, by setting norms for contemporary music with those as music was conceived during the years 1600 to 1900. Because of this, the researcher feels that a large repertoire of music of other places and other times, including our own contemporary music, is either ignored in the music curriculum or is treated superficially. He feels that undesirable results are obtained because music educators are conditioning their students to the musical styles of the common practice period to such an extent that they easily mistake those styles as the absolute norms against which all other music is to be judged. He further feels that when music educators confine student's musical cognition to one limited area of musical learning, they fail to provide them with fundamental concepts of musical materials upon which study of any or all manifestations of those materials may be based. Because of this, many music classes are producing listeners who are not capable of understanding music of their own contemporary culture.

It is obvious that the products of our schools, and specifically the products of our music classes are, for the most part, consumers of music. A large majority of elementary and secondary school students will not become composers or performers, but listeners. It is understandable that appreciation for any art form is greater when the listener or the viewer has, within his experience, information and knowledge concerning the relative values of the dimensions of the art form.

At what age should these experiences be made available to the student? Is there a magic age for the child to begin to learn about form in music, to learn about musical style, and to learn about concepts of musical dimensions and their relative values? Dr. Neidlinger's study postulates the following hypothesis:

> "Children at the elementary level can learn concepts of the musical dimensions and their relative values, preparatory to subsequent study of musical style and form arising from those styles and forms, through a program of listening exercises which focuses attention upon the similarities and differences in the dimensions."

The musical dimensions used by Dr. Neidlinger were time, pitch, loudness, timbre, and simultaneity. Examples of these dimension were tape-recorded first as a single dimension, then gradually assimilated with the other dimensions. Each listening exercise included twenty-four examples. Each of the examples in every exercise was progressively more difficult.

An advance organizer was applied to the procedure in the study by asking the subjects to observe two concrete objects and to comment on the similarities and differences of those objects.

When the listening exercises were presented to the experimental group, each exercise was played three times to provide for the synthesis-analysis-synthesis sequence in learning. To determine the ability of the subject to differentiate and describe the various musical dimensions, different lengths and sizes of cylinders were placed on a peg-board by the subject to indicate the dimensions of time, pitch and loudness. Colored beads were used to represent timbre. The final arrangement of the cylinders and beads comprised a visual symbol of what the subject had perceived.

The control group was taught by the regular music teacher who used traditional procedures in presenting the listening lesson. The subjects ranged in age between seven and eleven years. A pre-test and post-test technique was used as an evaluative measure to determine whether or not the subjects had been able to gain in their perceptable acquity.

Results

By applying statistical treatment to the pre-test and post-test scores of both the control and experimental groups, it was found that the T scores were quite small, indicating no significant difference between the mean scores of the pre-test and those of the post-test. Therefore, the postulated hypothesis was rejected.

Reflections

Dr. Neidlinger has done a thorough job of reviewing psychological theories of learning. This very large section of the study not only reviews these theories for the reader who has been able to study psychology extensively, but also presents a detailed explanation of these learning theories to the non-psychologist.

The study was limited due to the fact that a small number of subjects was used, and that laboratory conditions for the experiment were not available. The manipulation of the cylinders and beads by the subjects may have been a determining factor in the low T scores when statistical treatment was applied to the mean scores of the control and experimental groups. The reviewer feels that a weakness of this experiment lies in the method of response used by the researcher. Perhaps some other type of response which the subjects were more accustomed to giving, such as an oral or written one, would have resulted in a different outcome of the experiment.

While the study is a limted one, it is of a kind which is needed. So-called listening or "appreciation" music lessons have too long been made with a haphazard presentation on the part of many teachers. It is too easy for the teacher to say to the class: "Today we will listen to this recording. I hope you will enjoy it." It is feasible to assume that children of any age will be more receptive and enjoy listening to music if they first have some insight into the make-up of the selections being heard. If they can learn to discriminate and to differentiate between the parts and dimensions of a musical selection, their knowledge and enjoyment of that selection as a whole should be greatly enhanced. The question still remains, however, as to when and how these dimensions are to be included in the music curriculum.

Although the original hypothesis of this experiment stands rejected, Dr. Neidlinger's contribution is no less important. A negative result of research is as important as a positive one. The result of one piece of research, either positive, or negative, is not necessarily final and decisive. Only after the research project has been repeated several times can a conclusive result be obtained. Dr. Neidlinger has made a definite contribution to the field of music education. It is hoped that since his interest lies in this area, he will continue further research.

THE HISTORY OF MUSIC IN KANSAS CITY: 1900-1965

D.M.A. Dissertation. University of Missouri in Kansas City, 1967.
James Milford Crabb, Kansas City, Kansas Public Schools.

Reviewed by M. O. Johnson, Independence, Mo. Public Schools.

This review of music history from 1900 to 1965, is a prodigious work concerning the musical activities and their development in the metropolitan area. Because all of the information does not pertain to the history of public school music, and because the dissertation proved to be such interesting reading, the reviewer has quoted several sections of the writing verbatum. Also, because the history of the public school music program is inter-woven within the total story, we have the permission of the author to reprint that information about the music in the public schools.

. . . The public schools began to function in 1867 when the Kansas City School District was organized. Central High School was opened that year. The public library was opened in 1874.

In 1874, there were 4,163 pupils in a town of 32,260. Manual High School was opened in 1897. Kindergartens were started in 1893. Lincoln High School was opened in 1906 and Westport High School in 1908.[56]

Mr. E. C. White was employed at an additional salary of $25 a month to teach music to the teachers of schools, and to give such aid as they require in their classes, to enable them to teach elementary principles of music successfully in their schools.[57]

S. G. Bennett was the first Supervisor of Music for the Kansas City, Missouri Public Schools, serving from 1890 to 1894.[58]

S. G. Bennett was engaged by the Board of Education to teach vocal music at the high school in 1895. The board adopted the Normal Music Course to replace the National Music Course. He required the pupils to memorize the following statement: "Loud singing in a schoolroom is disorder."[59]

Professor Carl Betz was Supervisor of Music and Calisthenics from 1896 to 1898.

By 1900, the oldest district school system had largely disappeared. A school or group of schools was supervised by a superintendent, principal, and special supervisors. The grade teacher taught each of the subjects offered, including music.

Bessie M. Whitely was supervisor of music for the Kansas City, Missouri Public Schools. Carrie Farwell Vorhees was the music teacher at Central High School; Maybelle Lucas was the vocal music teacher at Lincoln High School; Mrs. Jennie Schultz was the music teacher at Manual Training High School; and Jennie Rose was the vocal music teacher at Westport High School. The elementary teachers taught their music in their classrooms. Weekly music meetings were held at the Library Building by the supervisor of music to assist teachers who needed help.[60]

Rote singing was replaced by music reading and consideration of the indvidual child with his unique vocal possibilities. The fact that the child could learn to read music gave music a more secure position in the curriculum.

> The teaching of music was very satisfactory in those schools where the teacher especially qualified was intrusted with the instruction of several classes, as was the case in the Lowell, Jefferson, Longfellow, and Yeager Schools.[61]

The responsibilities of the schools are carried out through the local school boards and by the cooperation of the school personnel. The school's purpose is to develop good citizens — morally, socially, economically, politically — by giving each child the opportunity to satisfy his needs, interests, and abilities.

. . . Many of the European musicians who came to Kansas City brought skills handed down as a sacred trust. These persons have been honor bound since the Middle Ages to maintain high standards as performers and as instrument makers or repairmen.

Most Americans are children of immigrants, many of whom came seeking refuge on the frontier. "Kansas City was, for many years, the narrow part of an hourglass bringing the pioneers to its portals and spreading them westward by way of the Santa Fe and Oregon Trails, the ralroads, and finally the airplane."[68]

The European immigrants and emigrants from the Eastern United States brought a culture which they imposed on Kansas City. As the city matured into a great financial and industrial center, the layer of culture made it a musical center as well.

Carl Busch and Contemporaries

The "Father of Kansas City Music," as Carl Busch was later called, came to Kansas City (128,000 population) in 1887 at the age of twenty-five and, for more than fifty years, took an active part in the music of the community. He found people interested in music, seeking expression in singing societies and other musical groups. There was widespread ambition to attain amateur skill with some instrument. The city was enthusiastic about good opera but had only vague ideas about chamber and symphonic literature.

Busch left no fortune but helped give the city a national reputation as a cultural and civic center. He was born in Bjerro, Denmark on March 29, 1862, the youngest of five children.[69] The boys were tutored at home by a governess, trained in music as well as academic subjects, during their early years. Carl practiced on the flute, cello, and violin but did not study music seriously until he was nineteen. His father enrolled him in law school at Copenhagen but Carl, against his father's wishes, turned to music. He enrolled in the Copenhagen Conservatory of Music to study piano with Bondesen, theory with Niels Vilhelm Gade (1817-1890) and Emil Harmann (1836-1898), and violin with Lars Tofte (1832-1907). He worked so diligently that within three years he was able to secure engagements with the Copenhagen Symphony Orchestra and the Royal Opera House Orchestra. Busch won a scholarship to the Brussels Conservatory but it was revoked because he worked on composition instead of attending orchestra rehearsals.

Busch went to Paris and found a position with Benjamin Godard's orchestra where he was assigned as a violist in a viola section of twenty players. He studied wth Godard in 1886 and was able to secure, through Godard (1849-1895), playing engagements with Anton Rubinstein (1829-1894) and Camille Saint-Saens (1835-1921), who were in Paris at that time. He also became acquainted with Charles Gounod (1818-1893) and his works. He accepted an engagement to play in a resort hotel in Southern France but the hotel burned, leaving him without a position. He had heard, through a violinist friend, that there were oppirtunities for musicians in Kansas City. He found three other musicians, former fellow members of the Royal Opera House Orchestra of Copenhagen, who were interested in going to the New World and organized the Gade String Quartet (Busch's hero was Niels Vilhelm Gade, his violin teacher and a composer). The members of the quartet were: Daniel Hanneman, first violin; Valdemar Pappenbrock, second violin; Henri Matthiassen, cello; and Carl Busch, viola. Their contact in Kansas City was Thyge Sogard, Danish Consul, who was former music publisher. Sogard was interested in having string quartet concerts presented in Kansas City. The members of the quartet were interested in finding fame and fortune in the New World of America.

In 1887, the Gade String Quartet played several concerts in Sweden and then came to the United States and Kansas City to make fortunes and reputations.

The quartet arrived in Kansas City after an ocean trip and a rail trip via Canada. They had few clothes but carried a collection of Beethoven, Mozart, Haydn, and Boccherini string quartet scores. The long trip and the first Kansas City concert for a small audience, on an afternoon in a gloomy hall on the second floor at 916 Main Street, made the men feel discouraged. Carl Busch played a viola solo, "Legende" by Wieniawski (1835-1880), on this concert with Mary O'Doherty (Mrs. Lee Riley) at the piano.[70] This concert was sponsored by the Lorelei Society and Mr. W. H. Lieb.

KANSAS CITY SYMPHONY ORCHESTRA

CARL BUSCH, Conductor

Soloist, Miss **ELIZABETH PARKINA**, Soprano

NOVEMBER 4th, 1912

PROGRAM

Symphony No. 3, in A Minor (Scotch) - *F. Mendelssohn*

Introduction-Allegro agitato
Scherzo-Assai vivace
Adagio cantabile
Allegro Guerriero-Finale Maestoso

Scene and Aria from "Lucia" - - - *G. Donizetti*

MISS ELIZABETH PARKINA
(Flute obligato Mr. J. Rendina)

Intermission

Overture to "Rienzi" - - - *R. Wagner*

Aria, Depuis le jour from "Louise" - - *G. Charpentier*

MISS ELIZABETH PARKINA

Scene and Valse from Ballet "Gretna Green" - - *E. Guiraud*

Prelude to the 4th scene of "La Vierge" - - - *J. Massenet*

"Carnival in Paris" - - - - - - - *J. Svendsen*

Steinway Grand Piano from J. W. Jenkins' Sons Music Co

Fig. 6.—Kansas City Symphony Orchestra Program, Second Season, 1912-13, Monday Afternoon, November 4, 1912, Shubert Theatre.

The Kansas City, Missouri Public Schools were making progress in music under the direction of Mrs. Bessie M. Whitely.

It was Mrs. Bessie M. Whitely (Supervisor of Music from 1900-1921) who first sought to place music on an equal basis with other subjects in the curriculum. Interclass contests were organized, school concerts were given and school orchestras were formed. By 1911 some schools started their own music libraries. Instrumental music classes for beginning band and orchestral instruments were authorized by the Board of Education in November, 1916. Her course of study stressed a uniform method of teaching, books for indigent children, sight-reading, and development of a sense of rhythm.[106]

Great strides were made in music. Progress was indicated by the desire for higher standards of excellence in rendition of school songs, establishment of school concerts, installation of musical libraries, interclass musical contests, school orchestras, purchase by schools of pianos and player pianos for the use of the pupils, patronizing of high-class musical entertainments — assistance rendered by the school children.[107]

The establisrment of daily drill in school music and methods in the Normal Department was a most progressive measure. Music festivals were held and school orchestras organized. Thirty-three school orchestras were organized with a total of more than 300 students. In 1913-1914, two events of great educational value occurred, — a concert between the choral organizations of the high schools and a concert by the Kansas City Symphony Orchestra for children of the elementary grades.[108]

Music appreciation lessons were given in many schools during the "Children's Hour." In the fall of 1915, elementary and high schools combined in a choral and orchestral ensemble in the preparation and performance of music for the entertainment of the State Teachers' Association.[109]

On April 9-10, a performance was given at Convention Hall. 150 pupils of the elementary schools furnished the orchestra music; fifty-six schools and 3,000 pupils were represented. The next year a community orchestra was formed with the Jefferson School as the center. It was composed of members of the high school and grade school orchestras, and adults of the community; thirteen schools were represented.[110]

Orchestral instrument classes, — violin and other instruments, — were held after four p.m., not more than twenty cents a lesson from each pupil in classes from five to ten. Such classes were held in thirty-one schools. [111]

"In 1916, the teaching of band and orchestra instruments was authorized by the Kansas City, Missouri Board of Education."[134]

The music system in the Kansas City, Missouri Public Schools before 1921 had consisted of a supervisor of music and an assistant, with a music teacher in each high school. The teachers in the elementary schools taught music to the pupils in their classrooms with the aid of the music supervisors.

Prior to 1921, the Kansas City, Missouri schools had lagged in the development of the music program. Only about ten per cent of the high school students came into contact with music. Los Angeles High School in California, as a comparison, had sixty per cent of its students elect music as a subject toward graduation.

The Kansas City, Missouri Public School Board engaged Mabelle Glenn as supervisor of music in 1921. She had the responsibility, with three assistants, R. H. Brown, Mrs. Esther Darnell, and Miss Sarah Clifford, of directing the music program for a junior college (music classes and a teacher's college), four senior high schools, six junior high schools, and eighty-eight elementary schools.

The progress made in the Kansas City, Missouri Public Schools in 1924 is indicated in the Annual Report to the Board of Education by the Superintendent of Schools.

> Much is being done in music through the formation of more orchestras, classes in the appreciation of music and teaching of piano. It is most interesting and enjoyable to see and hear the kindergarten and primary orchestras, formed to develop rhythm.
>
> The little folks are taught to listen to the music, often played on the victrola, and determine which instruments should be played at different stages of the piece. The instruments used are bells, drums, toy instruments, small cymbals, and tambourines, often made by sewing tiny bells to the edge of a paper plate.
>
> The School Board co-operates with the Kansas City Symphony Association in bringing concerts to the school children. Miss Margaret Lowry, who replaced Miss Edith Rhetts, who was engaged by the Detroit Symphony, as music appreciation director, spends most of her time in work with the school children under the auspices of the Kansas City Symphony Association. Music contests upon which the boys and girls prepare are held each spring. Concerts are held during the fall and winter. Pupils are prepared through the use of phonograph records, received in the office of the superintendent, and by music appreciation notes for children's symphony concerts.
>
> In 1924, the teaching of piano in classes was begun under the supervision of Miss Helen Curtis and Miss Mabelle Glenn. Each child pays ten cents for a lesson. Both elementary and high schools give credit for outside music.[135]

By 1925, the music staff in the Kansas City, Missouri Public Schools had been increased.

By 1925, Mabelle Glenn had ten music teachers in the four high schools, four elementary school supervisors, one piano supervisor, fourteen piano teachers, one violin supervisor, seven violin teachers, one part-time teacher for each orchestral instrument, two music appreciation teachers, and one special music teacher for each platoon or departmental school.[128]

Each of the 45,000 children in the elementary schools in the Kansas City, Missouri Public Schools received daily instruction in music from the classroom teacher. Enrollments in the high school music classes increased. There were bands, orchestras, glee clubs, classes in general music, appreciation of music, instruments of the band and orchestra, and piano. Mabelle Glenn started free instrumental music classes with instruments loaned to the students without charge. Piano classes were started in the elementary schools. Credit was given for private lessons taken outside of school from private teachers. Students could earn up to six credits toward graduation from high school on a basis of one credit per semester per instrument. Credit could be earned on all symphony orchestra instruments as well as in piano and voice. Monthly reports were required on the pupil's work. Examinations were given at the end of each semester by a selected committee.

Young Peoples Concerts were again scheduled. Carl Busch had given symphony orchestra concerts for school children as early as 1911. Children were prepared for concerts by lessons in appreciation which included the use of special music notes and recordings when available.

Music Memory Contests were scheduled and a teacher's chorus was organized. City Festivals were organized and Christmas Sings were held at the Union Station.

Mabelle Glenn was secretary of the National Music Supervisors Conference in 1918 and from 1920 to 1925 served as a member of the organization's National Board of Control. When the Music Supervisors National Conference was held in Kansas City in 1925, the full forces of the Kansas City Schools and the community rallied to provide a memorable program for all who attended.

Mabelle Glenn was elected as the first president of the Southwestern Music Supervisors Conference in 1926 when the National Conference went on the biennial plan. In 1928, Miss Glenn was elected president of the Music Supervisors National Conference. She was instrumental, as president, in the establishment of the national office in Chicago with an executive secretary. This office is now located in the National Education Association building in Washington, D.C.

Miss Glenn was elected co-president of the Anglo-American Music Conference in Lausanne, Switzerland in 1929.

Mabelle Glenn was a successful educator, a competent musician, and particularly resourceful in the area of methodology in music and music materials for young people. She believed in the use of live music because she felt that the real love of music was best developed at the concerts. She became well-known as a community worker as director of the boys' choir at Grace and Holy Trinity Church and through her work with the Kansas City Philharmonic Orchestra. The Philharmonic children's concerts, the 7,000-8,000 pupil choruses in the Arena, and the Grace and Holy Trinity boys' choir set high standards of excellence. When not involved in the direction of the large events or the desk responsibilities of her position, Miss Glenn made frequent visits to the classroom.

"Music for every child" was her objective. She believed that America was restless because many young people lacked an emotional outlet. She wanted to stimulate self-activity through music in the schools, the kinds of activity that bring their rewards in satisfaction. She believed that instilling the love of music in children was the principal task of each music teacher.

Miss Glenn served as a lecturer for colleges and universities, including Northwestern University, San Jose State Teachers' College, University of Southern California, Columbia University, University of Idaho, Washington State College (Pullman), Julliard School of Music, University of Cincinnati, University of Michigan, University of Minnesota, University of Montana, University of Utah, University of Arizona, University of Texas, and Drake University.

> Miss Glenn received the honorary Doctor of Music degree from the Chicago Musical College in 1930 with Percy Granger. Rudolf Ganz was the director.
>
> In 1943, she received another honorary Doctor of Music degree from Monmouth College, her old alma mater.[137]

In 1933, she received the honorary Doctor of Music degree from the Kansas City-Horner Conservatory of Music.

Mabelle Glenn was helpful in promoting the circulation of thousands of musical scores and recordings through the assistance of the Kansas City, Missouri Public Library. A pamphlet (1939) was published by the library which contained lists of miniature orchestral scores, operas, cantatas, operettas, choral music, anthems and sacred cantatas, masses, and oratorios with available recordings.

Miss Glenn had added eight instrumental music teachers in the elementary schools by 1950.

Mabelle Glenn created a music education program in the Kansas City, Missouri Public Schools and a community relations program in the city that caught and has held national attention to the present time. She had a unique ability to secure help when she needed it. Her brilliant and joyful personality, her knowledge and her power to inspire others, gave her an important place among the great figures of music education.

The Kansas City, Missouri Public Schools had an extensive radio broadcasting program in elementary music from 1946 to 1952

The program was directed by Mabelle Glenn and Alice Gallup and broadcast by Station KMBC . . .

. . . Mabelle Glenn was succeeded upon her retirement in 1950 by Robert Milton, vocal music instructor at Southwest High School (1937-1950). There were five vocal music supervisors and eight elementary music teachers. Milton increased the music budget to provide for added services. Roy Tharp was appointed elementary instrumental music supervisor in 1951. The staff of eight elementary instrumental music teachers was increased to eighteen in 1951 and all were given contracts.

Robert Milton died in 1961 and was succeeded by Richard C. Berg, a well-known writer, lecturer, and authority on audio-visual aids with special interest in educational television. He came from Yonkers, New York, where he had been director of music and a consultant for the New York State Department of Education. "In 1962 there were 10 vocal music assistants and 18 instrumental music teachers under contract."[141] Tharp was appointed assistant director of music in 1964, with special responsibility for elementary and high school instrumental music. Under Richard Berg's guidance, the music budget for equipment and materials was greatly improved. The Music Educators National Conference convened in Kansas City, Missouri in March of 1966 with Richard Berg in the capacity of the host music director. A Kansas City Night was presented the evening of March 21, 1966 to a capacity audience of M.E.N.C. members and Kansas Citians. Several thousand pupils from the Kansas City, Missouri schools were featured on the program . . .

> . . . The Kansas City Conservatory of Music is about to take advantage of the authority granted them in its charter by the state of Missouri, and establish advanced courses of musical studies in all branches, upon the completion of which will be granted in their order the degrees of bachelor of music, master of music, and doctor of music. In arranging these courses, Dr. Hans Gartlan, who for many years was director of the Royal Conservatory of Odessa, Russia, will follow the standards established by the greatest musical institution in the Old World.[143]

On September 1, 1914, Charles F. Horner, an enterprising young teacher from Menomonie, Wisconsin, established the Horner Institute of Fine Arts at Linwood and Holmes. He had attended the University of Nebraska Law School and had been a principal of the Eddyville, Nebraska school prior to coming to Kansas City. His establishment of the Institute was coincident with the move of the Conservatory to 1515 Linwood. The curriculum of the Horner Institute of Fine Arts was organized by Earl Rosenberg to give a thorough course of study in the areas of music, dramatic art, and painting. The first year enrollment included 200 students, 134 of whom were professional musicians attracted to the school by the quality and reputation of the faculty members.

The faculty aimed to give the highest artistic instruction and education to young men and women and to urge the ideals of service to their fellow men. The school was dedicated to the serious study of the fine arts. Each teacher was chosen on the basis of artistic excellence, ability to impart his ideas to others, and high moral qualities. The program was aimed as serving two types of students — those who had a professional purpose and those who wished to attain more knowledge and proficiency in their area of culture.

On September 6, 1926, the amalgamated schools, the Horner Institute and the Kansas City Conservatory opened for the 1926-1927 term. The main offices were at 3000 Troost and the facilities at 1515 Linwood remained in use. Branch studies were continued at the Country Club location, 63rd and Brookside; Rockhill, 4016 Walnut; Northeast, 140 South Chelsea Street; Pembroke, at 75th and State Line; and in Kansas City, Kansas at 40 South 18th, the Argentine District, and the Quindaro District. The school operated under a charter from the state of Missouri as a public institution, not operated for profit and non-sectarian. Charles F. Horner was president, and L. L. Marcell was chairman of the Board of Trustees. There was a thirty-three member Board of Trustees with an Administrative Board, or Executive Committee, of five, headed by Earl Rosenberg and including Henry Gorrell, Albert H. Johnstone, Forrest Schulz, and John Thompson. Horner served without salary and Miss Grace Kaufman continued as registrar. There were three classes of trustees — honorary, advisory, and active. There was a combined faculty of 80 teachers and a student enrollment of nearly 5,000 students. The faculty included graduates in many areas of music and veterans of the concert field.

The Horner Junior College was established in 1932 to provide a regular college course in academic subjects. Sixty semester hours of academic subjects leading to the degrees of Associate in Arts and Associate in Education were offered (see Figure 14). The Board of Trustees, composed of nearly one hundred leading citizens of Kansas City, named Charles F. Horner as president and Clyde E. Evans as dean. The Advisory Committee included: O. C. Sanford, Assistant Superintendent of Instruction, State of Missouri; George Melcher, Superintendent of Public Instruction, Kansas City, Missouri; and A. Ross Hill, former President, University of Missouri.

Courses Leading to Degrees in
Music　Theatre Arts　Dancing　Expression
Kansas City — Horner Conservatory
Freshman-Sophomore Classes, College of Liberal Arts
Horner Junior College
Va. 6544　Lo. 3737　Dr. 0345　Ind. 829

Fig. 14 — Advertisement from the *Kansas City Journal-Post*, February 12, 1933.

In 1934, the Kansas City-Horner Conservatory of Music was renamed the Conservatory of Music of Kansas City. Earl Rosenberg remained as manager for several years until he resigned to enter personnel work with Lockheed Aircraft in California.

In 1936, the school was moved to the Armour Mansion, former home of Mrs. A. W. Armour, at 3500 Walnut Street, with each faculty member acting as an administrator. The Trustees supported the faculty during this period with John Thompson, eminent pianist, serving as director for both the college and the preparatory school. From 1936 to 1955, the Conservatory used the auditorium of the Unitarian Church at Thirty-fourth and Baltimore for assemblies and summer workshops.

The Conservatory of Music presented a concert of original compositions by the students from the studio of Francis Buebendorf on the evening of May 9, 1950 in the Unitarian Church, 3425 Baltimore Avenue, Kansas City, Missouri. Soloists included Robert Downs, baritone; Virginia French, piano; Judith Hulse, piano; Gordon May, flute; John Raimo, piano; Marilyn Sailor, piano; La Vergne Gresich, piano accompaniment. The Conservatory String Quartet was featured. Compositions included sonatas for piano by Ben Olsen and John Elliot, a suite for string quartet by Don Duncan, and a song "Lullabye" by Jack Ralston.

In 1951, the Conservatory was moved to 4420 Warwick Boulevard, the former Mrs. Simeon B. Armour home and carriage house. This facility offered an opportunity for an expanded program, with twenty-two studios, nine practice rooms, and a classroom. The carriage house (or Annex) now has eight studios and a classroom on the second floor. The first floor is used for classes in ballet.

In 1954, ground was broken for Grant Hall. Mr. Grant was surprised at the ceremony to find that the building was to bear his name. Mr. and Mrs. Grant had contributed $100,000.00 for its construction. Later donations from Mrs. Grant totaled $40,000.00, which helped liquidate the building debt on Grant Hall.

In 1955, the new $250,000.00 Grant Hall and Stover Auditorium was opened for use. This new and additional facility had 16 studios, a 250-seat recital hall, library, 4 classrooms, 6 practice rooms, a kitchen, dining hall, and administrative offices.

The honorary Doctor of Music degree has been conferred by the Conservatory of Music on Carl Busch, Madame Ernestine Schumann-Heink, Howard Hanson, Hans Schwieger, Forrest Schulz, Harvey Ringel, Regina Guilmette Hall, Richard De Young, Donald Swarthout, and Mabelle Glenn.

The year 1956 was the Golden Anniversary for the Conservatory of Music. The school, started by John A. Cowan on a modest scale, had succeeded with high standards. A large group of influential Kansas City citizens had placed the school on a permanent civic basis as a non-profit institution. This list of sponsors has included such persons as W. T. Kemper, Irvin Kirkland, R. A. Long,

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J. W. Jenkins, John F. Downing, Herbert F. Hall, J. C. Nichols, J. L. Love, D. J. Huff, Mr. and Mrs. W. T. Grant, W. D. Grant, Henry D. Ashley, John Henry Smith, Phil R. Toll, Sigmund Harzfeld, Mrs. Russell Stover, Powell Groner, Cliff C. Jones, Sr., Cliff C. Jones, Jr., Mrs. Walter Jaccard, Charles F. Horner, William Huttig, L. P. Rothschild, Dr. James DeRenna, Lester Milgram, and Henry C. Haskell. Most of the prominent Kansas Citans of the era and leading musicians in the city were associated with the Conservatory at various times.

The directors for the Conservatory of Music have been Arnold Volpe (1922-1926), Dr. Earl Rosenberg (1926-1928; 1929-1930), Albert H. Johnstone (1928-1929), Dr. John Thompson (1931-1938), Harold Van Duzce (1939-1940), Dr. Wiktor Labunski (1941-1958), and Dr. Archie N. Jones (1959). The directors have maintained the high standards inherited from John A. Cowan and Charles F. Horner.

. . . The major problem in the consummation of this work is the selection and not the collection of data. To be the author of a careful scrutiny of the Kansas City musical scene is a tremendous and on-going responsibility. It is hoped that as additional studies are made that more sources will be located and made available for study. The search for pertinent information has been difficult, frustrating, and exciting! Stern consideration of space and time have limited the study to representative persons and events from each period . . .

The review of this dissertation has been handled a little differently than the usual review. In addition to the information about the music in the public schools of Kansas City, Missouri, the History of the whole metropolitan area is included. It will prove interesting reading to more than the local residents. The early history abounds with interesting incidents of musical programs, the problems of staging these events, raising money, and obtaining the backing of the financial barons of the day. A most interesting aspect of the writings includes the programs of the individuals, groups, and companies of traveling organizations. The reprinting of these programs gives us insight into the musical fare of the early settler and kinds of musical entertainment that seemed most readily accepted. Of no small importance is the fact that entertainers performed in auditorium that were large enough to seat more than a thousand people.

It is a known fact that this History is the first of its kind in the Kansas City area. It will serve no small purpose to those in future years who will continue to write about the daily happenings in the musical world of the Kansas Cities. It can only be hoped that a continuum will be kept of the important happenings.

In addition to the historical information set forth in this dissertation, about one hundred sixty pages are devoted to reprints of programs, critiques of these events, names of music critics, performers, personnel of many of the performing groups, directors of musical and theater activity, and historical accounts of the men and women engrossed in the daily problems connected with the arts.

FOOTNOTES

(These footnotes will refer only to the written material being quoted from the original dissertation. The footnote numbering was not revised nor altered for this particular publication.)

[56] *Kansas City Journal-Post, September* 6, 1925.

[57] Secretary's Minutes, Article 3535, Kansas City, Missouri Board of Education (October 2, 1878), 266.

[58] *The Baton*, II (October, 1895), 5.

[59] *Kansas City and Its Schools* (1867-1917) Washington, D.C.: National Education Association, 1917), 4.

[60] "Excerpts from Manual and Directory of the Public Schools of Kansas City, Missouri," compiled by W. E. Benson, Secretary (November 20, 1900), 3-6.

[61] *Annual Report*, Kansas City, Missouri Public Schools, 1902-03, 183.

[68] Robert S. Townsend, *Proud Heritage* (Kansas City, Mo.: Kansas City Life Insurance Co., 1957), 2.

[69] Mildred Howard Barney, *Sir Carl Busch* (Kansas City, Mo.: The University of Kansas City Press, 1942), 9.

[70] Barney, 12.

[106] Bryce Turville, "Elementary Music in the Public Schools of Kansas City, Missouri" (unpublished Master's thesis, Dept. of Mus. Ed., University of Kansas City, Mo. 1962), 117.

[107] *Annual Report*, Kansas City, Missouri Board of Education, 1910-1911, 58.

[108] *Annual Report*, Kansas City, Missouri Board of Education, 1913-1914, 71-72.

[109] *Annual Report*, Kansas City, Missouri Board of Education, 1915-1916, 95.

[110] *Ibid.*

[111] *Annual Report*, Kansas City, Missouri Board of Education, 1916-1917, 718.

[133] William Theophilus Eicher, "The Use of Professional Symphony Musicians as Instructors of Instrumental Music in the Public Schols" (unpublished Ed.D. project, Columbia University, 1958), 160.

[134] *Kansas City Star*, October 16, 1966.

[135] Ella Wiberg, "The History of the Development of Public Education in Kansas City, Missouri" (unpublished Master's Thesis, University of Wisconsin, 1925), 59.

[136] George Holgate, *The Life of Mabelle Glenn, Music Educator*, (West Yarmouth, Mass.: Rainbow Press, 1965), 22.

[137] *Ibid.*, 136.

[141] Interview with Roy Tharp, July 29, 1966.

[145] *Kansas City Journal*, November 11, 1917.

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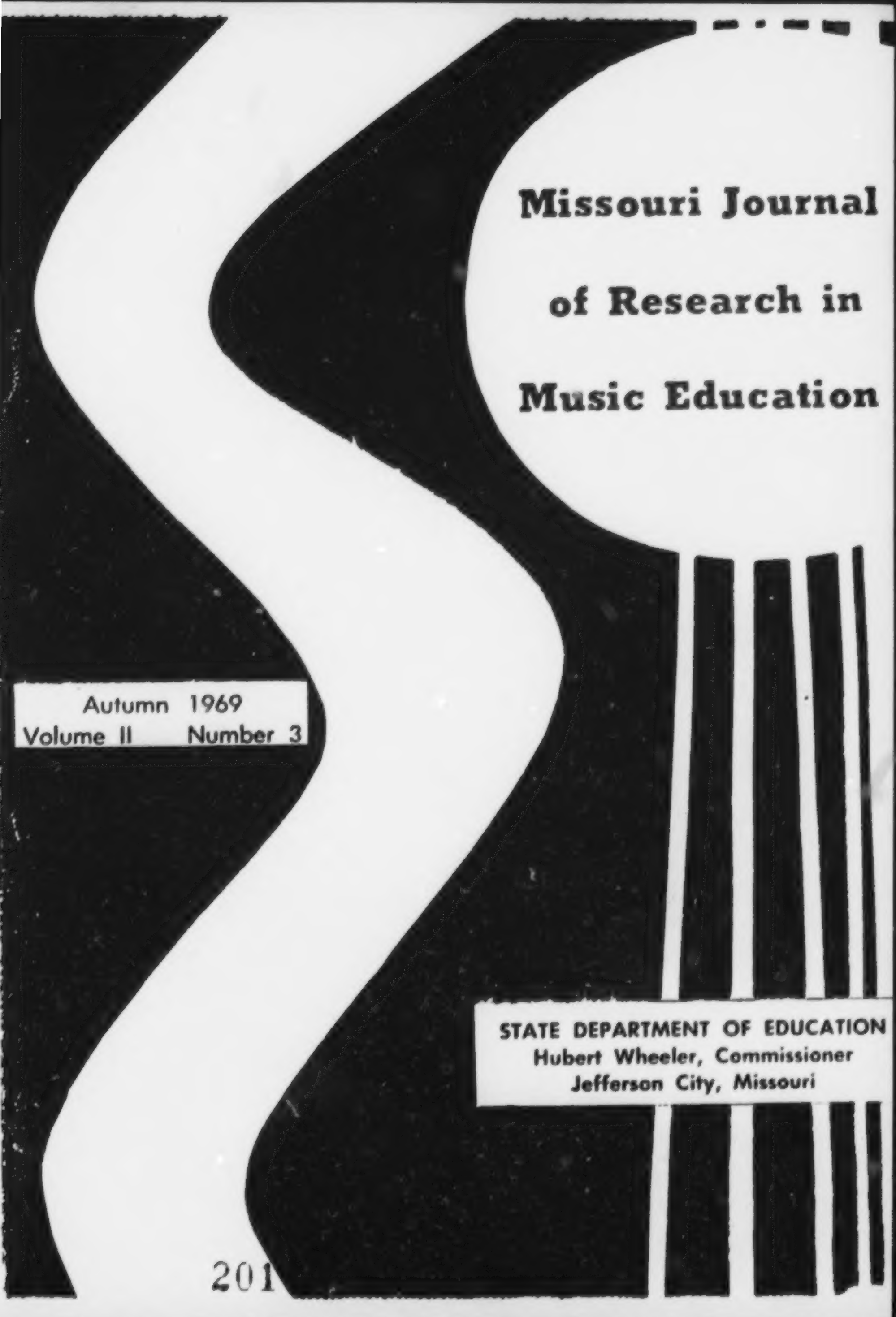

Missouri Journal of Research in Music Education

Autumn 1969
Volume II Number 3

STATE DEPARTMENT OF EDUCATION
Hubert Wheeler, Commissioner
Jefferson City, Missouri

MISSOURI JOURNAL OF RESEARCH IN MUSIC EDUCATION

Published by the Missouri State Department of Education

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PREFACE

The Missouri Journal of Research in Music Education, published as a Bulletin of the State Department of Education, is devoted to the needs and interests of the school and college music teachers of Missouri and the nation. This issue, Volume II, Number 3, is the eighth to appear in as many years.

The members of the Editorial Committee are grateful to those readers who have written suggestions concerning the content of past issues and request that criticisms and suggestions, always welcome and never unheeded, again be sent to the Editor concerning the content of this issue. We strive for a reasonable balance between music theory, history, philosophy or aesthetics, and pedagogy. It is difficult to judge how successful we are without reader response.

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– The Editor

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WIND INSTRUMENTS IN THE SEVENTEENTH CENTURY

Russell Coleman

Central Missouri State College

INTRODUCTION

Relatively little information exists in documental form regarding the history of wind instruments in the seventeenth century. One author states that until recently the arts of that century were "dismissed with contempt"[1] while another notes that historians of the nineteenth century labeled the period as "transitional" and avoided writing about it.[2] Research reveals that a radical revolution broke out at the opening of the century. A new appeal to the emotions began which developed throughout the Baroque era. This new style started in vocal music and was soon adapted to instruments.[3] The artistic ideal changed from dignity and rigid majesty to emotion and the "genuine language of the heart."[4]

For the first time, instrumental music rivals music for voices. The polyphonic style which had restricted instruments to a compass of a tenth to avoid interfering with neighboring parts, was being replaced by monophonic writing.[5] Praetorius, in the preface to *De organographia* from his *Syntagma musicum* (1618), observed "a growing emphasis on the spectacular and colorful and . . . a striving towards more direct expressiveness and greater overt emotional effect."[6]

One historian has categorized the causes of instrumental change during the century as follows:

1. The amazing development of instrumental technic, which went hand in hand with the perfecting of the instruments themselves.
2. The increasing differentiation between nationalities of musical needs and. taste.
3. The vitality of the polyphonic method as it applied to instrumental music.
4. The new monophonic conceptions of musical materials.[7]

Two sources which offer the best contemporary insight into the instrumental practices of the early portion of the period are the well-known works by Mersenne, *Harmonie universelle* (1636), and Praetorius, *Syntagma musicum* (1619). Of greatest value in the publication by Praetorius are the descriptions of instruments found in the second volume and the woodcuts showing those in use at the outset of the century. The *Harmonie universelle* also contains valuable descriptions of the instruments and their use.

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INSTRUMENTAL ENSEMBLES

Consorts

An extraordinary number of diverse types of wind instruments existed in the early seventeenth century, nearly all of which were built in sets or consorts with one uniform tonal color from soprano to bass.[8] Little or no standardization of instrumentation was followed in ensemble music as to specified instruments. The instruments were selected which had a wide range and dynamic flexibility from loud to soft.[9] Those of similar tessitura and agility were regarded as more or less interchangeable. It was common for a musical household to have sets of various instruments.[10]

During the fifteenth and sixteenth centuries, musicians had played together in small groups of allied instruments. This tradition of wind consorts continued into the early seventeenth century. Normal wind consorts consisted of double-reeded shawms and bombards (or recorders). Trumpets and drums were relegated to military usage while the combination of sackbuts and cornetts continued in church music.[11] No new instruments were invented, however, and they all began to be subjected to a period of selectivity and refinement. Music at the time of Praetorius was a "mixture of ancient heritage and recent innovation."[12] Before the era concluded, it eventually became characteristic to write for specific instruments[13] but until that time the winds were used to double existing string or voice parts. Notes not playable were either transposed an octave or changed to other notes in the same harmony.[14] The doubling was not continuous and instructions were not always clear. The practice of Italian musicians is noted by Thomas Coryat who wrote in 1611 that in Venice he heard sixteen to twenty men sing together "and when they sung, the instrumental musicians played also." At times "sixteen played together upon their instruments, ten sagbuts, foure cornetts and two violdegambaes of an extraordinary greatness."[15]

The majority of the wind instruments such as flutes, shawms, and krumhorns, were constructed to tunings a fifth apart so they could be used in sets of three's.[16] An entire set of instruments ranging from deepest and largest to highest and smallest was called an *accord*. *Sorts* refers to groups of a single type of instrument.[17] A collection consisting of instruments of the same family was called a *whole consort* while those including various types were designated as a *broken consort*.[18] Consorts consisted of from four to twelve instruments; the principal wind instruments utilized were recorders, shawms, krumhorns, cornetts, trumpets, and trombones.[19]

In Italy, musicans capable of playing all instruments were classified as *universal musicians*. Many Italian musicians, however, emigrated to England carrying the tradition with them. Such players were seldom found in Germany where musicians attempted to master only one or two instruments.[20]

Waits

Wind players were often employed by a king, nobleman, or later, a city government, to serve as watchmen or sentinels in camps, castles, and towns. Their duties included the sounding of an alarm or signal on some kind of horn. In England, these watchmen-musicians were known as *waits*. The instrument most commonly used by the waits was the shawm, constructed in various sizes so as to form a complete consort. The probability that the waits became relatively good performers is indicated by the fact that Thomas Morley dedicated his *Consort Lessons* to them. Orlando Gibbons was the son of a Cambridge wait and his brother, Ferdinando, served as a wait at Lincoln.

The waits' duties as watchmen gradually declined. A report in 1669 which states that "according to the ancient custom [they] shall play through this town every Thursday in the evening" suggests an emphasis on music rather than on patrolling. The tunes used were relatively simple for they had to be memorized and often were played with cold fingers. Some of these melodies are preserved in John Playford's *Dancing Master* published in 1665.

Gradually the waits lost their importance and became known in later times as itinerant musicians who played in the streets at Christmas time.

Stadtpfeifer

In Germany the counterpart of the waits was known as *stadtpfeifer*. The major distinction existed in their use of different instruments. *Turmsonate*, or tower music, developed from the practice of sounding the hours of the day from church or municipal towers. The usual ensemble was from four to eight players with trumpets, cornetts, and trombones as the principal instruments. One of the most prolific composers for this medium was Johann Pezel (1639-1694). His many compositions — in modern editions — are widely used today, primarily for pedagogical purposes. The stadtpfeifer raised the level of the brass ensemble to a peak unsurpassed until later centuries.

Church Guilds

In Italy the *canzonas* and *sonatas* of Giovanni Gabrieli (*ca.* 1154-1612) represented the final step away from the principles of mediaeval style. His music for brass consort was written for performance in the resonant cathedral of St. Mark's. The *Sonata pian'e forte*, often noted as one of the first instrumental ensemble pieces printed which designates the specific instruments to be used, is essentially a Venetian double-chorus motet for instruments. The work of Gabrieli and his followers became a dominant influence on the music of the seventeenth century.

The church was the greatest employer of musicians, often utilizing huge choirs. The mass written by Benevoli for the dedication of the Salzburg Cathedral (1628), used two eight-part choirs, two string ensembles, one group of woodwind instruments, and three of brass.

Oboe Bands

Early in the sixteen-hundreds, bands of hautboys replaced the drums and fifes for military service in England.[31] Their use continued throughout the century. An example of their music, *The Queen's Farewell* (1694), composed for oboe band by Paisible for Queen Mary's funeral, has been reprinted by Anthony Baines in Woodwind Instruments and their History.[32] In France, Lully undertook the organization of the military bands in his time. He composed or arranged marches for oboes of different sizes.[33] This familiarity with the instrument may have been an influencing factor in his use of them in his operatic scores. Parts for the oboe bands during the reign of Louis XIV were divided three ways, the third part often calling for a tenor oboe (taille) or bassoon. Marches and salutes for the instrumentation are preserved in the Philidor manuscripts in Paris.[34]

King's Musick

English kings maintained a compliment of musicians known as *King's Musick*. Among their duties was the assignment to perform at dinner, usually on cornetts or hautboys and flutes or recorders. Sackbuts were added to the ensemble on Sundays and holidays.[35] An account of the company in 1635 lists nine hautboys and sackbuts, seven flutes, three to five recorders, and eight cornetts among the musicians. Many played more than one instrument.[36]

Members of the guilds tried to confine knowledge of their skills to members and apprentices. The town musicians in Germany and Italy were all in guilds and were thus insured a monopoly on teaching. The prestige of wind playing had, in most locations, started a decline by the middle of the century. The Italian conservatories which had their beginnings in the early seventeenth century, provided instruction which eventually contributed to a more widespread rise of instrumental music, the decline of the guilds, and made possible the development of the virtuoso performer.[37] These conservatories, generally supported by the church, often used their students' musical skill as a means of profit by hiring out groups for performances.[38]

THE RISE OF THE ORCHESTRA

Monteverdi (1567-1643) has often been credited with establishing the foundation of the modern orchestra when he used approximately forty instruments to accompany the opera *Orfeo* (1607). Included in his orchestra at the first performance at Mantua were parts for four trombones, two cornetts, one small flute, one trumpet, and three muted trumpets.[39] Twenty-six orchestral numbers were interspersed within the opera. Contrary to previous practices, the composer specified in many places exactly which instruments were to play. The large orchestra was not an innovation but an attempt to organize the traditional large performing groups of the old mystery plays and *intermedi*.[40] Unfortunately, his use of instruments was not readily accepted and it remained for the composers at the middle of the century to develop his lead.

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Heinrich Schutz (1585-1672), a student of Giovanni Gabrieli, was perhaps the greatest German composer of the middle seventeenth century. As far as it is known, he wrote no independent instrumental music,[41] however, some of his works are of importance in the development of the orchestra. His *Symphonie sacrae* (1629) includes parts for cornett, violin, recorder, flute, trumpet, trombone, and bassoon.

All woodwind instruments of the modern orchestra with the exception of the clarinet, were actually represented in the latter Middle Ages. By refinement, the shawms and bombards became the oboes and bassoons and simple pipes developed into the transverse flute.[42]

Shawms (or oboes) did not begin to be regularly associated with strings in works of the better class of composers until after the middle of the century. The first mention of the oboe appears in Jean-Baptiste Lully's score to the ballet *Les plaisirs de L'Isle Enchantée* (1664) which contains a *March de Hautbois pour le Dieu Pan et sa Suite.*[43]

Lully (1632-1687) became the organizer of the orchestra. The tentative grouping of the ensemble into sections of strings, woodwinds, and brasses may be found in his scores. The woodwinds and trumpets are used in conjunction with strings and not, as was the case earlier, in place of strings.[44] Flutes and oboes are given parts in all of his operas. Usually they play in only six or seven scenes—dances, marches, and sometimes in *ritornelli* — and are generally omitted from the fuller ensembles and finales.[45] Episodes for a trio of solo wind instruments were inserted in some of the dances of Lully's operas.[46] The alliance of flutes, oboes, and bassoons in a family relationship is also evident in his works. The bassoons, however, appear irregularly. Trumpets — usually in pairs — are reserved for special scenes.[47] The trumpets were the first brass instruments to be admitted to the orchestra and were ordinarily inseparably associated with timpani.[48]

Marc' Antonio Cesti (1623-1669) used the standard group of ecclesiastical wind instruments in his opera, *Il Pomo d'Oro* (1667): two cornetts, three trombones, and a bassoon.[49] Parts for the cornett may be found in later scores by Bach, Handel, Gluck, and other eighteenth-century composers but basically it was an instrument which belonged to the pre-orchestral era.[50]

No known concerts devoted exclusively to the performance of instrumental music existed in France before about 1675. Instruments still retained their role of supporting voices, although in a more complex manner.[51] In the last quarter of the century, the orchestra was employed chiefly in churches and theatres in addition to concerts in private chambers of rulers and princes.[52]

Near the close of the century, string instruments were beginning to reach their peak of perfection due to the work of the craftsmen in Cremona. Woodwinds, although having assumed the form of modern instruments, were yet to be highly mechanized. The only woodwinds which were able to become a solid part of the orchestra were the double-reeds (oboes and bassoons). Nearly every orchestra had two oboes and one or more bassoons which helped the cellos and doubles-basses.[33] The newly-developed oboe was capable of playing — with a good reed — "as easie and as soft as the [recorder]."[34] A pair of flutes, either recorders or transverse flutes, sometimes was substituted for the oboes. As a rule, the players doubled. It should be noted that in the music of Henry Purcell (*ca.* 1659-1695), flute meant recorder, *hoboy* signified the newly-developed baroque oboe, and *taille*, the tenor oboe (not cor anglais). Purcell also intended that the bassoon be used as a bass instrument although he does not always designate it as such.[35]

Adam Carse has aptly described the development of the orchestra during the century.

> From the uncertainty and chaos of "all instruments," a string orchestra, the basis of a woodwind band and the merest shadow of a brass band have emerged, all still strung together by the incongruous medium of lutes and keyboard instruments.[36]

The orchestra which was to be available to the young Bach and Handel was comprised of a four-part string orchestra with keyboard or chordal instrument, two oboes (or flutes) with bassoons as their bass, and two trumpets and drums.[37]

THE PARISIAN WOODWIND CRAFTSMEN AND THE NUREMBERG TRUMPET MAKERS

A wide variance in pitch existed throughout the century. Praetorius reports that because of this variance, it was not the practice to play all kinds of instruments together in ensemble, and that wind instruments were built differently; some were tuned high, others low. Ordinarily the cornett and shawm sounded better when constructed to a higher pitch whereas trombones, bassoons, bassanelli, and bombards sounded more "grave and splendid" when pitched lower.[38] The variance in pitch was often as much as a fifth with a different standard used for *chamber pitch* and *choral pitch*. The latter was lower.

The tuning of instruments varied greatly. Wind instruments were tuned a minor third lower in England than in Germany.[39] It was not until the succeeding century that pitch reached a very high degree of standardization. The tuning fork invented in 1711,[40] was a strong contributing factor.

String instruments, by the very nature of their construction, were able to adjust to variances in pitch. Before the flutes, oboes, and bassoons could be admitted to the orchestra, several improvements were necessary. First, it was essential to make them in two or more pieces so the pitch could be regulated. The bore needed to be improved to produce a smoother tone, and the cut of the reed had to be adapted to the new conditions, although we do not know exactly in what way this was accomplished.[41]

Jean Hotteterre

Jean Hotteterre (?-1678) was the leader of a group of French craftsmen who developed the recorder (as we know it today), the conical flute, the oboe, and the true bassoon as opposed to the old *curtal*.[62] A bagpipe maker, he redesigned the recorder into sections, making it possible for exact boring of each part of the tube, which improved the intonation of cross-fingered notes.[63] Plate 127 in *European Musical Instruments* shows recorders built by Jean Hotteterre.[64]

Hotteterre and Michel Philidor (?-1679) redesigned the shawm into a three-jointed instrument known outside France as the French oboe or in England as the French *hoboy*. The newly-designed bore assumed more narrow proportions and the finger-holes are smaller. The reed is more narrow and is completely lip-controlled. Good cross-fingerings exist on the new instrument. It was first played by the inventor in Lully's ballet, *L'Amour malade* (1657).[65] Reports indicate that the newly-designed instrument could be played nearly as loud as the trumpet and as soft as the recorder.[66]

Hotteterre and his wind-instrument-makers probably made the four-jointed bassoon known in England as the French *basson* and a three-jointed conical flute which eventually won out in acceptance from the recorder.[67] From 1653 forward, Lully used two oboes and a bassoon in his operas. The range of dynamics and tonal expressiveness was judged as fully equal with those of the violin.[68] All of Hotteterre's instruments were made with multiple joints, making it possible to give the bore a broken profile, and with characteristic ornamentation at the joints.[69] With the work of the Parisian craftsmen, France became a leader in woodwind instrument design which it has maintained into the twentieth century.[70]

Nuremberg Brass-Instrument Industry

In Germany, a brass-instrument industry flourished which was possibly influenced by the stadtpfeifer tradition. The central location was Nuremberg. Isaac Ehe was one of the principal makers of trumpets. Five generations of the family remained in business during the years from 1612-1794. Records indicated that twenty trumpets were sold to the Bavarian Court and thirty-six silver trumpets to the Brandenburg Court.

Prior to the Ehe dynasty, Hans Schnitzer sold twenty-four silver-gilt trumpets to the King of Poland (1604). Records in Leipzig list the purchase in 1607 of three trombones and two cornetts by the city.[71]

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THE INSTRUMENTS

Flute

The beginnings of the transverse flute have been falsely placed at the time of Purcell and Handel. Its history is traceable to Eastern influence. Portrayals of it exist in ivory carvings and manuscripts of the tenth century.[12]

The transverse flute and end-blown flute (recorder) were competitors throughout most of the seventeenth century. There is evidence, however, that as early as the middle of the sixteenth century the French preferred the transverse flute to the recorder. The recorder was regarded as best for playing *chants rustiques.*[13]

The importance of the instrument in England is revealed by the report that Nicholas Lanier, who was "musician for the flute" under Queen Elizabeth, was charged with keeping two boys to teach them to play "Lez flutes et cornetts."[14]

The bore of the earliest transverse flutes was cylindrical. Towards the end of the century the head joint remained the same and the remainder of the tube assumed conical proportions (smaller at the open end).[15] After the development by Hotteterre, the resulting tone was much more veiled and colorful.[16] Lully is credited with introducing this improved transverse flute into the opera orchestra. By the end of the century, it was described as a "rival" of the violin.[17]

Recorder

The recorder existed under many names. Among those most encountered are: English flute, common flute, direct flute, echo flute, beak flute, flûte douce, and blockflöte. It has been described as a near relative of the *flageolet* and a low relative of the *penny whistle.*[18]

Praetorius wrote that it was difficult to set up a flute ensemble because it was seldom that flutes were available which were correctly in tune with one another. He observed that they were easily affected by heat and cold; the pitch became lower in winter and higher in summer. Praetorius suggested that it would be advisable to have two full sets of wind instruments—one set built a semitone below the other. Another method he proposed for coping with the pitch problem was to make the instrument with what amounted to a tunable head joint,[19] a feature which had to wait until much later in the century for development.

It was the practice to bore duplicate holes for the little finger in early flutes and oboes so the player could use either hand for the lower part of the instrument. The hole not used was filled with wax. When a key was used for the lowest hole, it was fitted with two finger plates for the same purpose.[20]

The tone of the recorder in the early seventeenth century was comparatively full but uncolored; it was well-suited to the consort music for which it was chiefly used.[21] Parts were sometimes distinguished from those for transverse flute by being written in the French violin clef.[22]

The larger models of the instrument in bass and contrabass forms, were fitted with four keys for the lowest notes. Two of the keys were sometimes operated by pedals."

The decline of the recorder was not as rapid as many believe for in the records of the King's Musick, six recorders are listed in 1628; as late as 1764, four are still included."

After Hotteterre's developments, the tone became less open and more reedy. The volume of sound capable of being produced on the instrument was insufficient for full orchestral settings." This, along with its lack of flexibility to satisfy the growing demand for expression—dynamic and tonal contrast—caused the instrument to gradually lose favor."

Flageolets and Pipes

The flageolet is a French variant of the recorder. It is said to have been invented by Juvingny in Paris in the late-sixteenth century." Most commonly, it was considered as an instrument for amateurs." The French flageolet had four finger-holes and two thumb-holes while the English version had seven finger-holes and one thumb-hole. The *quadrille* is a Boehm system flageolet."

Fifes and drums took part in the English dramatic productions of the sixteenth century. In the seventeenth century, they used to attract a crowd. An implication that the performances were of poor quality is suggested by a warrant issued in 1671 by Charles II for the "apprehension of all persons beating Drums, or playing Fifes at dumb shows or models without the license of his Majesty's Sergeant Trumpeter.""

The use of the pipe and tabor was extremely common in Herefordshire and the Marshes of Whales. They were used by beggars and for peasants' dancing."

Oboe

In the early part of the century, the term oboe, hautbois, and shawm were interchangeable. *Hautbois* has often been translated as "high wind," but doubtless meant "loud wood" according to the old French contrast between *instruments hauts et bas*."

Two kinds of oboes were described by Mersenne as being in use in France; the *poitou* and the *hautbois*. The shape of the instruments was similar to the large block flutes. He describes them as being suitable for the large ensemble, capable of making "great noise." Their tone is called "the strongest and most violent tone of all the other instruments, except for the trumpet."" Hardly any other wind instrument was more frequently employed.

The earliest form of the modern oboe dates from about 1660 with the work of Hotteterre. It had a slim conical bore. The diameter at the lower end was twice the size of the diameter of the upper end." By decreasing the taper and making the flare more narrow, the strident tone quality was reduced. The oboe then began an independent career as the first treble woodwind to become standard in the orchestra."

The oboe served as the nucleus of the wind-bands of the seventeenth century, much as the clarinets do in present-day bands. The new importance given to the instruments is again noted in an English Register, that of the Edinburgh Town Council of 1696.

> The Cornetts of the Town Waits were superceded by the 'French hautboye and double curtle, instruments far more proper than the instruments they now have to play upon.'[96]

Shawm

The shawm, like the recorder, existed under many names. In England it was called wait, wayte, waight, or haboy. In France the common name was hautbois. Other names used were schalmey, shalmuse, shalmele, and pommer (bombard or bombart for the lower-pitched versions). The shawm at the beginning of the century had no keys. Its tone has been described as:

> . . . fiery, penetrating and reedy almost beyond belief (even more so than a Highland bagpipe), and the instrument was used only for bands, not in chamber music or refined orchestras.[97]

Shawms were seldom heard alone. Most often they were used with cornetts and trombones.

An excellent description of a bass bombard, including dimensions, construction details, playing characteristics, and probable uses may be found in an article by Oromszegi which appeared in *The Galpin Society Journal.*[98]

Bassoon

The bassoon (fagott or curtal) family in the late Renaissance included all sizes from discant fagott, a treble bassoon, to *subkontrafagott*, a sub-double-bass bassoon.[99]

Mersenne illustrates three types of bassoons, a *fagott, courtaux,* and *cervelat*. The *cervelat* is a very small block approximately five inches in length which is drilled with eight holes, making the tubing forty inches long.[100] The tube doubled on itself, serves as a distinguishing characteristic between the bassoon and the old bass varieties of oboe such as the *pommer* or *bombard.*[101]

Gabrieli and Schütz are very likely the earliest composers whose bassoon parts have survived. The instrument is first named in Lully score in 1674, although it could have been in use ten or more years prior.[102]

The first contra-bassoon was made in 1620 by Hans Schreiber in Berlin. Its size made it awkward and the intonation was deficient. It failed to gain great importance in practical usage.[103]

The bass shawn or pommer (not the bassoon) is the true bass of the oboe family but the bassoon served so efficiently as such that it gained acceptance over the other forms.[104]

Crumhorn

The crumhorn (krumhorn, cromorne) is a double-reed instrument with a cylindrical bore which does not overblow. The range is limited to nine notes. Its double-reed is enclosed in a chamber. Consorts of the instruments were used in a similar manner to recorders, playing vocal polyphony and dance tunes in parts.[105] The rigid double-reed instrument in which the reed was enclosed, was ultimately rejected because of its limited range.[106]

Chalumeau

The chalumeau is best-known as the instrument which J. C. Denner (1655-1707) of Nuremberg developed into the clarinet. Its significance is of little relevance to the seventeenth century and the history of the clarinet fits more clearly into that of the eighteenth century.

Cornett

The cornett or *zink* was commonly used in two forms. The first was a straight instrument of conical bore, pierced with finger holes and played with a cupped mouthpiece. The second form was called *cornetti muti* or in Germany, *stille-zinken*. The muted form was slightly curved with the mouthpiece and body in one piece.[107] This instrument had a less emphatic tone.

No alterations occurred in the instrument's construction in the seventeenth century. It was used as the treble voice of the trombone choir, chiefly because the lower-pitched members of the cornett family and the higher-pitched members of the trombone family were relatively unsuccessful.[108]

Cornetts were often used to double voices. Their pure tone has been described as "silvery" with the clarity of the trumpet without the excessive brilliance and volume.[109]

Mersenne describes the instrument as being capable of playing so softly that it can be heard no further than a flute. He reports that a Mr. Sourin of Avignon could so control the tone and his breath that he could play one-hundred measures without breathing.[110]

Cornetts were employed at Westminster Abbey, York, Durham, and probably in most cathedrals in conjunction with the organ and trombones as a support to the singers.[111] Parts rarely appear for them in seventeenth-century opera scores. They were carried into the eighteenth century in their original capacity in ecclesiastical music.[112]

Serpent

The serpent is the true bass of the cornetts, having a wider bore and thinner walls. It lacks a thumb-hole at the back. Designed primarily to accompany plain-chant in churches and cathedrals, there is no actual evidence that it was ever used for other purposes until the last of the eighteenth century.[113] There was no technical change in the instrument in the seventeenth cenury.

The serpent was described as being capable of supporting twenty very strong voices and being so easy to play that a child of fifteen could attain the volume of a man twice his age. It could also be played softly enough to accompany the quiet voices of chamber music.[114]

Trumpet

The trumpet underwent little change until the addition of valves in the nineteenth century. Their use in the early part of the seventeenth century was primarily to serve public celebrations and in time of war. Military trumpet-calls of the day are preserved by Mersenne.[115]

The military use of the trumpet in Scotland is recorded by Dalyell. "By the Articles of War in 1641, signals for the Scotish army should be made by trumpet and drum."'[116]

The trumpet maintained its inherited pride in the Guilds and when it was used elsewhere, it always played the leading part. It was employed in opera scores when dramtic warlike or festive situations occurred in the music.[117]

The favored instrument of the century was the long "D" trumpet—about seven feet in length. The art of the trumpeter reached a very high level. Players specialized in either high parts as *clarino-players* or in low parts, known as *principal trumpeter*.[118]

> The clarion player had, by assiduous practice, acquired perfect mastery over his instrument, combined with a marvellous command of compass and execution, its small tubing enabling him to reach the extreme harmonic notes. It is for this reason that composers like Bach and Handel were able to find players who could reach the high f'''.[119]

A contemporary account by Roberts in his *Philosophical transactions* (1692) is critical of the instrument.

> The trumpet so famous in all ages for its use in the art of war, the loudness and nobleness of its sound peculiarly suiting it to that purpose, is nevertheless one of the most imperfect musical instruments. For, though it has a large compass, the greater part of the intermediate notes are wanting and some of them imperfect.[120]

The range and technical difficulty of most English trumpet parts was conservative compared with Italian and German music. Henry Purcell was one of the few English composers to extend the range from the *principale* register to the *clarino*.[121]

The slide trumpet or *tromba da tirarsi*, was constructed with the throat of the mouthpiece so long that by gradually pulling it out, all notes in the scale can be played. The mouthpiece was held against the lips with the fingers of the left hand, the right hand moving the instrument in and out like the slide of a trombone. The instrument was later used briefly by J. S. Bach.[122]

French Horn

The French horn developed from short to long tube, wide to narrow bore, narrow bell to widely expanding bell, cup-shaped mouthpiece to funnel-shaped mouthpiece, from a range up to the eighth partial to a range to the sixteenth partial, from the timbre of a bugle to the tone of a trumpet, and eventually, in the following century, to the mellow timbre of the present French horn.[123] One source in England relates it was called a French horn because it was transformed in France from the hunting horn. Another source claims it was rare in France, being admitted at a late date and called *cor allemand*.[124]

The date of the transformation from the hunter's horn into an art instrument is not actually known although it occurred in the second half of the century. The Bohemian Count Sporck is said to have introduced it into Germany.[125]

Parts for horn occasionally appear in the works of Cavalli and Lully.

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The trombone, or *sackbut*, is unique among wind instruments in that it has not been basically altered from its original fifteenth-century form. Trombones were built in five sizes and were used most frequently to double voices.

The sizes, with voice doublings, were:

Discant trombone-soprana voice
Alto trombone-alto voice
Tenor trombone-tenor voice
Bass trombone-bass voice
Contrabass trombone

The discant was normally played on cornett or slide trumpet and the contrabass was seldom used.[16]

The earliest English music which included a part for the true discant was the *March and Canzona* for the funeral of Queen Mary (1695) by Purcell.[17]

In outdoor bands, the trombones appeared with shawms and in chamber consorts with cornetts. It was rarely used in opera scores but remained throughout the century as a frequent member of church orchestras.[18]

FOOTNOTES

1. Warren Dwight Allen, *Philosophies of Music History* (New York: Dover Publications, 1939, 1962), 3.
2. Thurston Dart, *The Interpretation of Music* (London: Hutchinson University Library, 1954), 103.
3. Curt Sachs, *The History of Musical Instruments* (New York: Norton, 1940), 352.
4. Karl Geiringer, *Musical Instruments*, 2nd ed., trans. by Bernard Miall, ed. by W. F. H. Blandford (New York: Oxford University Press, 1945), 147.
5. *Ibid.*, 351.
6. Michael Praetorius, *Syntagma musicum: Vol. II, De organographia*, 1st and 2nd parts trans. by Harold Blumenfeld (USA: Harold Blumenfeld, 1949), ii.
7. Theodore M. Finney, *A History of Music* (New York: Harcourt, Brace & Co., 1947), 290.
8. Donald Jay Grout, *A History of Western Music* (New York: Norton, 1960), 200.
9. Sachs, *op. cit.*, 352.
10. Dart, *op. cit.*, 127.
11. Adam Carse, *The Orchestra* (London: Max Parrish & Co., 1949), 14.
12. Allen, *op. cit.*, 12.
13. Grout, *op. cit.*, 270.
14. Robert Donington, *The Interpretation of Early Music* (London: Faber & Faber, 1963), 519.
15. Dart, *op. cit.*, 105.
16. Praetorius, *op. cit.*, 37.
17. *Ibid.*, 12.
18. *Harvard Dictionary of Music*, Willi Apel, ed. (Cambridge, Mass.: Harvard University Press, 1944), 182.

AVAILABLE

19. Grout, *op. cit.*, 200.

20. Praetorius, *op. cit.*, 11.

21. Walter L. Woodfill, *Musicians in English Society from Elizabeth to Charles I* (Princeton, N. J.: Princeton University Press, 1953), 33.

22. Joseph C. Bridge, "Town Waits and Their Tunes," *Proceedings of the Musical Association* LIV (1928), 69.

23. *Ibid.*, 69.

24. Woodfill, *op. cit.*, 76.

25. Bridge, *op. cit.*, 69.

26. John Playford, *Playford's English Dancing Master* (1651), a facsimile reprint with an intro., bib., and notes by Margaret Dean-Smith (London: Schott & Co., 1957), 90 pp.

27. Grout, *op. cit.*, 361.

28. Ernst H. Meyer, "Form in the Instrumental Music of the Seventeenth Century," *Proceedings of the Musical Association* LXV (1938), 49.

29. Grout, *op. cit.*, 268.

30. Frank L. Harrison and Joan Rimmer, *European Musical Instruments* (London: Studio Vista, 1964), 37.

31. Francis W. Galpin, *Old English Instruments of Music*, 4th ed., rev., with suppl. notes by Thurston Dart (London: Methuen & Co., 1965), 123.

32. Anthony Baines, *Woodwind Instruments and their History*, rev. ed. (New York: Norton, 1963), 284.

33. Adam Carse, *The History of Orchestration* (New York: Dover Publications, 1964), 67.

34. Baines, *op. cit.*, 283.

35. Woodfill, *op. cit.*, 187.

36. *Ibid.*, 185.

37. Allen, *op. cit.*, 72.

38. *Ibid.*, 73.

39. Carse, *History of Orchestration*, 39.

41. *Ibid.*, 294.

42. Carse, *The Orchestra*, 46.

43. Harrison, *op. cit.*, 34.

44. Carse, *History of Orchestration*, 77.

45. *Ibid.*, 70.

46. Grout, *op. cit.*, 363.

47. Carse, *History of Orchestration*, 71.

48. Carse, *The Orchestra*, 16.

49. Carse, *History of Orchestration*, 66.

50. Adam Carse, *Musical Wind Instruments* (New York: Da Capo Press, 1965), 267.

51. Albert Cohen, "A Study of Instrumental Ensemble Practice in Seventeenth-Century France," *The Galpin Society Journal* XV (Mar. 1962), 8.

52. Carse, *The Orchestra*, 37.

53. *Ibid.*, 16.

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55. *Ibid.*, 123.

56. Carse, *History of Orchestration*, 83.

57. Carse, *The Orchestra*, 16.

58. Praetorius, *op cit.*, 14.

59. *Ibid.*, 16.

60. Dart, *op. cit.*, 56.

61. Sachs, *op. cit.*, 380.

62. Baines, *op. cit.*, 276.

63. Harrison, *op. cit.*, 33.

64. *Ibid.*, Plate 127.

65. *Ibid.*, 34.

66. Baines, *op. cit.*, 278.

67. Harrison, *op. cit.*, 35.

68. *Ibid.*, 34.

69. Baines, *op. cit.*, 276.

70. Harrison, *op. cit.*, 38.

71. *Ibid.*, 36.

72. Galpin, *Old English Instruments*, 113.

73. Cohen, *op. cit.*, 4.

74. Galpin, *Old English Instruments*, 114.

75. *Ibid.*, 115.

76. Donington, *Interpretation of Music*, 487.

77. Cohen, *op. cit.*, 5.

78. Robert Donington, *The Instruments of Music*. 3rd. ed., rev. (London: Methuen & Co., 1962), 96.

79. Praetorius, *op. cit.*, 34.

80. Carse, *History of Orchestration*, 15.

81. Donington, *Interpretation of Music*, 488.

82. *Ibid.*, 489.

83. Geiringer, *op. cit.*, 175.

84. Galpin, *Old English Instruments*, 107.

85. Donington, *Interpretation of Music*, 488.

86. Geiringer, *op. cit.*, 176.

87. *Ibid.*, 176.

88. Dart, *op. cit.*, 123.

89. Donington, *Instruments of Music*, 98.

90. Galpin, *Old English Instruments*, 116.

91. John Graham Dalyell, *Musical Memoirs of Scotland with Historical Annotations* (Edinburgh: Thomas G. Stevenson, 1849), 153.

92. Sachs, *op. cit.*, 382.

AVAILABLE

93. Marin Mersenne, *Harmonie Universelle*, trans. by Roger E. Chapman (Hague: Martinus Nijhoff, 1957), 378.

94. Sachs, *loc. cit.*

95. Donington, *The Instruments*, 100.

96. Galpin, *Old English Instruments*, 143.

97. Donington, *Interpretation of Music*, 491.

98. Otto Oromszegi, "The Bass Bombard of 'Master CK' of Sopron," *The Galpin Society Journal* XX (Mar. 1967), 3-8.

99. Donington, *The Instruments*, 102.

100. Mersenne, *op. cit.*, 272.

101. Carse, *History of Orchestration*, 16.

102. Baines, *op. cit.*, 286.

103. Geiringer, *op. cit.*, 173.

104. Donington, *Interpretation of Music*, 493.

105. *Ibid.*, 494.

106. Sachs, *op. cit.*, 352.

107. Carse, *History of Orchestration*, 17.

108. Donington, *Interpretation of Music*, 495.

109. *Ibid.*, 496.

110. Mersenne, *op. cit.*, 346.

111. Galpin, *Old English Instruments*, 142.

112. Carse, *History of Orchestration*, 17.

113. Donington, *Interpretation of Music*, 496.

114. Mersenne, *op. cit.*, 352.

115. *Ibid.*, 334-35.

116. Dalyell, *op. cit.*, 175.

117. Carse, *History of Orchestration*, 19.

118. Geiringer, *op. cit.*, 184.

119. Galpin, *Old English Instruments*, 151.

120. Dalyell, *op. cit.*, 179.

121. Don Smithers, "Seventeenth-Century English Trumpet Music," *Music & Letters*, Vol. 48/4 (Oct. 1967), 361.

122. Sachs, *op. cit.*, 385.

123. Sachs, *op. cit.*, 384.

124. *Ibid.*, 384.

125. Geiringer, *op. cit.*, 187.

126. *Ibid.*, 186.

127. Francis W. Galpin, "The Sackbut, Its Evolution and History," *Proceedings of the Musical Association* XXXIII (1907), 12.

128. Carse, *History of Orchestration*, 18.

BEST COPY AVAI

Allen, Warren Dwight. *Philosophies of Music History*. New York: Dover Publications, 1939, 1962.

Arnold, Denis. "Instruments and Instrumental Teaching in the Early Italian Conservatories," *The Galpin Society Journal* XVIII (Mar. 1965), 72-81.

Baines, Anthony. "James Talbot's Manuscript," *The Galpin Society Journal* I (Mar. 1948), 9-26.

_____. *Woodwind Instruments and their History*, rev. ed. New York: Norton, 1963.

Baker's Biographical Dictionary of Musicians, 5th ed., Nicolas Slonimsky ed. New York: G. Schirmer, 1958.

Bessaraboff, Nicholas. *Ancient European Musical Instruments*. Boston: Museum of Fine Arts (by Harvard University Press), 1941.

Bridge, Joseph C. "Town Waits and their Tunes," *Proceedings of the Musical Association* LIV (1928), 63-92.

Bukofzer, Manfred F. *Music in the Baroque Era*. New York: Norton, 1947.

Carse, Adam. *The History of Orchestration*. New York: Dover Publications, Inc., 1964.

_____. *Musical Wind Instruments*, with a new intro. by H. Voxman. New York: Da Capo Press, 1965.

_____. *The Orchestra*. London: Max Parrish & Co. Ltd., 1949.

Cohen, Albert. "A Study of Instrumental Ensemble Practice in Seventeenth-Century France," *The Galpin Society Journal* XV (Mar. 1962), 3-17.

Crewdson, H. A. F., compiler. "The Waits," *The Worshipful Company of Musicians: A Short History*. London: Constable, 1950.

Dalyell, John Graham. *Musical Memoirs of Scotland with Historical Annotations*. Edinburgh: Thomas G. Stevenson, 1849.

Dart, Thurston. *The Interpretation of Music*. London: Hutchinson University Library, 1954.

Donington, Robert. *The Instruments of Music*, 3rd ed., rev. London: Methuen & Co. Ltd., 1962.

_________. *The Interpretation of Early Music*. London: Faber & Faber, 1963.

Dorian, Frederick. *The History of Music in Performance*. New York: Norton, 1942.

Finney, Theodore M. *A History of Music*. New York: Harcourt, Brace and Co., 1947.

Galpin, Francis W. *Old English Instruments of Music*, 4th ed., rev. with suppl. notes by Thurston Dart. London: Methuen & Co. Ltd., 1965.

_____. "The Sackbut, Its Evolution and History," *Proceedings of the Musical Association* XXXIII (1907), 1-25.

_____. *A Textbook of European Musical Instruments*. New York: E. P. Dutton & Co. Inc., 1937.

Geiringer, Karl. *Musical Instruments*, 2nd ed., trans. by Bernard Miall, ed. by W. F. H. Blandford. New York: Oxford University Press, 1945.

Grout, Donald Jay. *A History of Western Music*. New York: Norton, 1960.

Grove's Dictionary of Music and Musicians, 5th ed., 10 vols., ed. Eric Blom. New York: St. Martin's Press, 1954-61.

Halfpenny, Eric. "Musicians at James II's Coronation," *Music & Letters* XXXII/2 (Apr. 1951), 103-14.

_________. "William Bull and the English Baroque Trumpet," *The Galpin Society Journal* XV (Mar. 1962), 18-24.

Harrison, Frank L. and Joan Rimmer. *European Musical Instruments*. London: Studio Vista, 1964.

Harvard Dictionary of Music, Willi Apel, ed. Cambridge, Mass.: Harvard University Press, 1944.

Lang, Paul Henry. *Music in Western Civilization.* New York: Norton, 1941.

Langwill, Lyndesay G. "The Waits," *Hinrichsen's Musical Year Book* VII (1952), 170-83.

Mersenne, Marin. *Harmonie universelle contenant la théorie et la pratique de la musique, 1636,* facs. ed., F. Lesurer, ed., 3 vols. Paris: Centre nationale de la recherche scientifique, 1963.

________. *Harmonie universelle,* trans. by Roger E. Chapman. Hague: Martinus Nijhoff, 1957.

Meyer, Ernst H. "Form in the Instrumental Music of the Seventeenth Century," *Proceedings of the Musical Association* LXV (1938), 45-61.

Miller, Hugh M. *History of Music: College Outline Series,* 2nd ed. New York: Barnes & Noble, Inc., 1953.

Oromszegi, Otto. "The Bass Bombard of 'Master CK' of Sopron," *The Galpin Society Journal* XX (Mar. 1967), 3-8.

Playford, John. *Playford's English Dancing Master* (1651), facs. ed. with intro., bib., and notes by Margaret Dean-Smith. London: Schott & Co. Ltd., 1957.

Praetorius, Michael. *De organographia,* Vol. II of *Syntagma musicum,* facs. ed., ed. Willibald Gurlitty. Kassel: Bärenreiter, 1929.

________. *De organographia,* Vol. II of *Syntagma musicum,* 1st and 2nd parts trans. Harold Blumenfeld. USA: Harold Blumenfeld, 1949.

Pulver, Jeffrey. *A Dictionary of Old English Music & Musical Instruments.* London: Kegan Paul, Trench, Trubner & Co., Ltd., 1923.

Sachs, Curt. *The History of Musical Instruments.* New York: Norton, 1940.

Schwartz, Harry W. *The Story of Musical Instruments,* Garden City, New York: Doubleday, Doran & Co., Inc., 1938.

Smithers, Don. "Seventeenth-Century English Trumpet Music," *Music & Letters,* Vol. 48/4 (Oct. 1967), 358-65.

Van Ess, Donald Harrison. *The Stylistic Evolution of the English Brass Ensemble.* Ph.D. dissertation, Boston University, 1963.

Westrup, Jack A. and F. L. Harrison. *The New College Encyclopedia of Music.* New York: Norton, 1960.

Woodfill, Walter L. *Musicians in English Society from Elizabeth to Charles I.* Princeton, N. J.: Princeton University Press, 1953.

THE EMERGENCE OF THE PUBLIC CONCERT

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The Public Concert Appears First In England

The public concert, defined as being a musical entertainment open to a public audience on payment for admission, has a history of less than 300 years. Prior to and during most of the seventeenth and early eighteenth centuries, secular music was performed almost exclusively in the courts of the nobility, in private circles (such as academies[1] or *collegia musica*[2]), or in taverns. According to Robert Elkin, the "tavern is, in fact, the first ancestor of the modern concerthall, the connection between music and drinking being of respectable antiquity."[3]

The earliest developments in the history of the public concert seem to have occurred in England. During his short reign, Oliver Cromwell introduced, for the first time in English history, regular State concerts into court life; it was apparently the invention of Cromwell to "invite an audience especially to hear formal performances by skilled musicians."[4] This practice of assembling an audience to *listen* (not to participate) was immediately imitated elsewhere. Performances in London taverns seem to have been especially frequent.

In London, "the first small development in the evolution of the concert-room was the 'music-house,' this being a tavern in which a room was specially set aside for music."[5] The earliest records of such establishments appear in the middle of the seventeenth century, possibly the most famous of which was *The Mitre* in London House Yard near St. Paul's Cathedral. In *The Mitre* the players, on a rudimentary concert platform, were separated from the audience. There was apparently no admission fee, "the patrons being expected to tip the musicians at their discretion."[6]

It is generally agreed that the first public concert (to which the audience was admitted by payment) was given by John Banister in London in 1672, fifty years before any similar enterprise was heard of in Germany. The following announcement appeared in the *London Gazette* of December 30, 1672:

> These are to give Notice, that at Mr. *John Banister's* House, now called the Musick-school, over against the *George* Tavern in White Fryers, this present Monday, will be Musick performed by Excellent Masters, beginning precisely at four of the Clock in the afternoon, and every afternoon for the future, precisely at the same hour.[7]

Banister, having lost his position as violinist at Court, hired the large room in Whitefriars, made a raised box for the performers, and furnished the rest of the room with small tables and chairs for the audience. Both vocal and instrumental music were performed, and the charge for admission was one shilling. Having launched the first establishment of regular concerts outside a tavern, Banister continued his enterprise until 1678, "with a program daily in the afternoon."[8]

During the last year of Banister's concerts, 1678, Thomas Britton,[9] a coal merchant with an interest in music, started a new series of concerts which lasted until 1714. In the upper story of his warehouse in Clerkenwell in London, Britton established weekly concerts which were at first open to the public and later required an annual subscription of ten shillings.[10] The Britton concerts gradually attained considerable fame, attracting—besides eminent musicians such as Handel and Dr. Pepusch—famous poets, painters, and many members of the nobility.

About 1680 a number of professional musicians opened a concert room in London on Villiers Street. The concerts there, usually referred to as the "Musick-Meeting (or Consort) in York-Buildings"'[11] concerts, became known especially for fashionable performances which took place in this room (until the building was torn down in the middle of the eighteenth century). The concerts at Villiers Street in the earlier years of its existence seem to have been badly organized, if one accepts the account of Roger North, who wrote in his *Memoirs*:

> ... All the Quallity and *beau mond* repaired to [the Musick-Meeting] ... But the plan of this project was not so well layd as ought to have bin, for the time of their beginning was inconsistent with the park and the the playhouses, which had a stronger attraction. And what was worse, the masters undertakers were a rope of sand, not under the rule or order of any person, and every one foreward to advance his owne talents, and spightfull to each other, and out of emulation substracting their skill in performing, all which together scandalized the company, and poysoned the enterteinement. Besides the whole was without designe or order; for one master brings a consort with fuges, another shews his guifts in a solo upon the violin, another sings, and then a famous lutinist comes forward, and in this manner changes followed each other, with a full cessation of the musick between every one, and a gable and bustle while they changed places; whereas all enterteinements of this kind ought to be projected as a drama, so as all the members shall uninterruptedly follow in order, and having a true connexion, set off each other. It is no wonder that the playhouses got ground, and as they ordered the matter, soon routed this musick meeting."[12]

"Clearly the art of programme-building was still in its infancy."[13]

A culmination in fashionable performances at the Villiers Street concert room came in the celebration of St. Cecilia's Day, November 22, 1683. (The annual St. Cecilia concerts, managed by the Musical Society, were given from 1684 until 1703 at Stationers' Hall; for each concert a distinguished poet wrote an ode in praise of music and a distinguished composer set the ode to music.)

In 1713[14] Hickford's Room, one of the first important public concert rooms in London, was first used for public performances of music. The first Hickford's Room, in James Street, Haymarket, was closed in 1739 when Thomas Hickford removed his concert establishment to Brewer Street, Golden Square, where he maintained the room until 1779. A fashionable concert room of the first part of the eighteenth century, Hickford's Room concerts after 1739 were on an even larger scale than those in the older room in James Street. In addition to the usual concerts of "Vocal and Instrumental musick"[15] given by soloists, oratorios, anthems, and other similar compositions were performed. Subscription concerts became even more successful in the new Hickford's Room, and many famous performers appeared in concerts there, among which were the violinist-composers Francesco Geminiani, Pietro Castrucci, and Francesco Veracini. A concert worthy of special notice took place in Hickford's Room on May 13, 1765, when the nine-year-old Mozart and his sister gave their last public concrt before leaving England. The *Public Advertiser* announced this event on March 11, 1765, as follows:

> BY DESIRE
>
> For the Benefit of Master MOZART, of eight years [who was actually nine], and Miss MOZART, of twelve years of Age, prodigies of Nature, before their Departure from England, which will be in six weeks Time. THERE will be performed at the End of this Month, or the Beginning of April next, a Concert of
>
> Vocal and Instrumental MUSIC.
>
> Tickets at Half a Guinea each
>
> To be had of Mr. Mozart, at Mr. Williamson's in Thrift-street [now Fifth Street] Soho, where those Ladies and Gentlemen, who will honour him with their Company from Twelve to Three in the Afternoon, any Day in the Week, except Tuesday and Friday, may, by taking each a Ticket, gratify their Curiosity, and not only hear this young Music Master and his Sister perform in private; but likewise try his surprising Musical Capacity, by giving him any Thing to play at Sight, or any Music without Bass, which he will write upon the Spot, without returning to his Harpsichord. The Day and Place of the Concert will be advertised in the Public Advertiser eight Days before."[16]

Hickford's Room and the Hanover Square Rooms were the most important concert halls in London in the eighteenth century. The latter contains the most famous concert halls of London. Originally Giovanni Andrea Gallini owned half the property, and Johann Christian Bach and Charles Frederick Abel each had a quarter share, but within a short time Gallini bought out Bach and Abel and became the sole owner. The Hanover Square Rooms opened in 1775 and concerts were held there until 1874. The first concert at the Hanover Square Rooms was one of the Bach-Abel subscription concerts (which they had established in 1763).

With the concerts offered by J. C. Bach and C. F. Abel in the 1760's,

> . . . the fashionable potential of concerts became higher, as did the price of admission: at first, half a guinea each; then five guineas for the series of six. These concerts luxuriated in high-society patronage. The music given was doubtless of fine quality, yet we imagine the audience was largely interested in itself and came to see and be seen. The events must have been regarded as very honorific, for they had to be increased in number to satisfy some of the demand for tickets; but for the season of 1768, Mr. Bach blew up their snob value even further by announcing that the subscriptions would be limited to four hundred."[17]

In the same year (1768), on June 2, J. C. Bach played the first pianoforte solo ever heard in an English concert. Bach and Abel moved their enterprise to the Hanover Square Rooms in 1775, where they remained until shortly before Bach died in 1782.

In 1783[18] some musicians established a concert organization which they first called the "Hanover Square Great Concerts" and later the "Professional Concerts." These concerts lasted until 1793. This organization—

> . . . constituted, substantially, what we would now call a symphony orchestra series. Nobility shone in abundance on the subscription list. The price was relatively moderate—six guineas for twelve concerts—but the number of subscribers was limited to five hundred."[19]

In 1786 Johann Peter Salmon, a German violinist who had left the organization of the Professional Concerts, set up a rival series of concerts, the most important of which were those given in 1791-92 and 1794-95 when Joseph Haydn directed the performances of his twelve "London" Symphonies. The decade 1790-1800 in London "witnessed an unprecedented number of public performances."[20]

Among the numerous concert organizations which came into existence in London in the eighteenth century, at least one more deserves mention — the Concerts of Ancient Music, which were primarily devoted to performing the works of Handel. The Ancient Concerts (also later known as "The King's Concerts") existed from 1776 to 1848. No music composed within the previous twenty years was to be performed at these concerts. At the time of the establishment of these concerts, the orchestra numbered 43 players, and in 1848 there were 56.

> The choral trebles at first consisted entirely of boys selected chiefly from the Chapel Royal and Westminster Abbey, but they afterwards gave place to ladies. The earlier programmes included an overture (usually by Handel), two or three concertos by Handel, Martini, Corelli, Avison or Geminiani,

> several choruses and solos from Handel's oratorios and an anthem, glee or madrigal; but occasionally an entire work, such as the Dettingen Te Deum, was given as the first part of the concert. For many years the programmes were almost exclusively Handelian, varied by songs from Gluck, Bach, Purcell, Hasse and others. After 1826 there was greater variety in the schemes, and Mozart's "Jupiter" Symphony, his Symphonies in D and B-flat, the overture to the 'Zauberfloete' and a selection from his Requiem were included in the programmes for 1826. From that date an orchestral work by Mozart was performed at nearly every concert, although Handel still maintained his supremacy. In 1834 we find Haydn's "Surprise" Symphony and in 1835 a selection from 'The Creation' and 'The Seasons' in the programmes. In the latter year Beethoven was represented by his 'Prometheus' overture, and during the last ten years of the concerts his second symphony, overtures to 'Fidelio' and 'Egmont', a chorus from 'King Stephen' and other works were given. In 1847, at a concert directed by Prince Albert, Mendelssohn was solo organist and played Bach's Prelude and Fugue on the name of B.A.C.H.
>
> In 1785 the royal family began to attend the concerts regularly, and then it was that they were styled "The King's Concerts." As a mark of his interest in the performances George III personally wrote out the programmes. Up to 1795 the concerts were held in the new rooms, Tottenham Street, afterwards known as the Queen's or West London Theatre, but in that year they were removed to the concert-room in the Opera-House, and in 1804 to the Hanover Square Rooms. In addition to the twelve concerts given every year, a thirteenth was added when 'Messiah' was performed in aid of the "Fund for the support of Decayed Musicians and their Families." The last concert took place on 7 June 1848.”

Not all of the London concerts of the eighteenth century were of high artistic merit. Arthur Loesser indicates that —

> Often they were mere stunts in the guise of music. For instance, we have a report that in the year 1789 an Italian came to London and gave a concert with eleven cats. The animals were well trained: each one had its own particular timbre and range; each one made correct entrances upon a given signal and also kept pretty good time. So it was said.”

Early Concert Institutions in Continental Europe

About 1700, concerts began to be propagated by the *collegia musica* in Germany, Sweden, and Switzerland, but the first important continental institution in the history of the public concert was the *Concert Spirituel*, which was founded in 1725 in Paris by A. Philidor, and which served as the model for other organizations for concert-giving. At first a musical institution for the production of sacred vocal works, the scope of the *Concert Spirituel* was soon enlarged to include secular instrumental works, especially symphonies and concertos. The organization lasted until 1791; it was replaced by others of a similar nature.

A new musical group was organized in 1743 when a group of persons gathered at a private home in Leipzig for the first performance of what was at first called the "Great Concert"; the orchestra on this occasion consisted of 16 performers. The merchants who formed the group each contributed 20 thalers a year to the organization, paid the musicians, invited guests, and solicited new members. The atmosphere of the "Great Concerts" was different from that of the older *collegia*, for the meetings of the former "were less like collegiate stag parties and more like polite family parties: women were welcomed; and when they came with the men of their households, admission was free to them."[10] Although the concerts were interrupted by the Seven Years' War, they resumed in 1763, under the direction of J. A. Hiller, who gave the concerts the title of "*Liebhaberkonzerte*" (1763-78). The orchestra was increased to 30, and regular performances were held until Easter, 1778. After a pause of three years, the concerts were resumed in the *Alte Gewandhaus* (which was replaced, almost a century later, in 1884 by the *Neue Gewandhaus*). Again under the direction of J. A. Hiller, the *Gewandhaus* concerts opened a subscription list for 24 concerts, and the first regular subscription concert was given on November 25, 1781. The *Gewandhaus* concerts became Leipzig's most important musical institution, and also one of the most celebrated and persistent musical organizations in the world.[11]

In the eighteenth century many pleasure gardens were to be found in most of the capital cities of Europe, and one of them, the *Augarten* in Vienna, is especially important, for it was the place of the first performance of many a masterpiece. Dedicated to the public by the Emperor Joseph II, the *Augarten* was opened in 1775. Although at first it seems to have been merely a garden, in 1782 a concert room was opened, and summer morning concerts were started that year in the *Augarten* by Philipp Jakob Martin in association with Wolfgang Amadeus Mozart. From 1782 onward Mozart and his works were frequently heard, as were the symphonies of Beethoven later. Among great artists who performed in the *Augarten* were Czerny, Stein, Clement, Moscheles, and Linke. The concerts were given at seven-thirty in the morning; "the early walk or drive, the semi-open-air conditions of performance, and the fresh and rural atmosphere clearly appealed to a large number of the residents of Vienna's old and crowded streets."[12]

One debut in the *Augarten* deserves special mention. On a Thursday morning in May 1803 a first performance was given of a violin sonata. The violinist was a mulatto named Bridgetower, "a fine player, but so extravagant in his manner that people laughed while they listened. The pianist was Beethoven, and together they played from a manuscript hardly dry. That manuscript was the 'Kreutzer' Sonata.'"[36]

The concerts in the *Augarten* eventually had to suffer the inevitable fate of all similar institutions which aim over the heads of those whom they wish to attract; by 1830 eminent performers had ceased to appear there.

Early Concert Life In The United States

> Concert life in the American colonial cities commenced in the 18th century. According to newspaper announcements, the first concert of record was held in Boston in 1731; the second in Charleston, South Carolina, in 1732; the third in New York, 1736; and the fourth in Philadelphia, 1757. From these dates on, each of these cities enjoyed an increasing number of concerts, at which the programs were similar in content to those abroad, particularly in London, from which city the latest published music was sent regularly to America."

The announcement of the first concert of record in the United States appeared in December 1731 in the *Boston News Letters*:

> On Thursday the 30th of this instant December, there will be performed a *Concert of Music* on sundry Instruments at Mr. Pelham's great Room, being the House of the late Dr. Noyes near the Sun Tavern.
>
> Tickets to be delivered at the place of performance at *Five shillings* each. The Concert to begin exactly at Six o'clock, and no tickets will be delivered after Five the day of performance.
>
> N.B. There will be no admittance after Six."

By 1754 the city of Boston had a Concert Hall where concerts of "Vocal and instrumental Musick to consist of Select Pieces by the Masters'"[39] were given. Regular subscription concerts, definitely established by 1766, may have been inaugurated in the late 1750's.

William Selby was largely responsible for the rapid progress of music in Boston during the years after about 1770. Although he seemed mainly concerned with instrumental music when he first came to Boston, gradually Selby's interest seemed to center in choral music. One of his concerts of 1773 shows the type of music he presented. Handel was represented in three works: "an overture, the *Hallelujah* chorus, and the *Grand Coronation Anthem in 22 Parts*. In addition to songs, an organ concerto, and a sinfonia, by unnamed composers, there was a *Glee in three parts, composed in the year* 1600.'"[40]

Charleston, South Carolina ran a close second to Boston in fostering the first public concert in the United States, and this Southern city also founded, in 1762, the first musical society formed in the United States, the St. Cecilia Society, which remained in existence until 1912. In October of 1732 in Charleston, there was advertised a ball after a concert; colonial concerts seem to have often been social gatherings with dancing to follow. "This does not reflect unfavorably on the taste in the choice of programs, which compared well in quality with those of concerts in England."[31] Concert performers were usually local teachers, some of whom included dancing and fencing with music in their list of offered services. Competent amateurs also supplemented the concert programs. "Charleston was perhaps America's most musically minded city during the later middle eighteenth century."[32]

The third American city to inaugurate public concerts was New York. The first concerts were given there in 1736, one of which was advertised as being a "*Consort* of Musick, Vocal and Instrumental for the benefit of Mr. Pachelbel, the Harpsichord Part performed by himself. The songs, Violins and German Flutes by private Hands."[33] Increasingly frequent concerts were offered for the artists' own benefit and for charity in New York after 1736. New York's first series of subscription concerts lasted from 1760 until 1767. The first open air summer concerts in the city were established in Ranalagh Gardens in 1765. In 1774 French and Italian virtuosi performed for the first time in New York; on one concert appeared a Mr. Caze, whose program was as follows:

1st Act

A grand Orchestry's Symphony
A French Ariette will be sung accompanied with the guitar and violin.
Mr. Caze will play his own composed music, on the violin with Mr. Zedtwitz.
A Concert on the Flute
A Sonada on the Spanish Guitar
The first Act to end with a March

2nd Act

A Grand Orchestry's Symphonie [sic]
A French Ariette accompany'd with the Mandolin and Violin
A Solo on the Violin
A Duo on Mandoline [sic] and Violin
A Sonada of the Salterio; and d'Exaudet's Minuet with echoes.
The Concert to finish with a March of the grand Orchestry
After the Concert there will be a ball."[34]

Music lovers in New York in the eighteenth century were often troubled by disturbing elements at concerts. One protest appeared in New York *Weekly Post Boy* (1764) and was signed "X.Y.Z.":

> It is a very just observation that a gentleman is to be known by his politeness — this qualification, wherever it is to be found, convinces us that it's [sic] possessor has seen the world and has had his manners formed by a good education . . .
>
> I am led into this short reflection by a circumstance, I can scarcely think of without indigna-

> tion. What I mean is the strange behaviour at the Concert, of a certain set of males and females to whom . . . I will give the soft appelation [sic] of gentlemen and ladies. I am a dear lover of music and can't bear to be disturbed in my enjoyment of an entertainment so polite and agreeable. How great then is my disappointment and vexation, when instead of a modest and becoming silence nothing is heard during the whole performance, but laughing and talking very loud, squawling [sic], overturning the benches, etc. Behaviour more suited to *broglio* than a musical entertainment.
>
> What is meant by so ill-timed an interruption I know not: for . . . I cannot conceive that either the audience or the gentlemen performers are under any obligations to bear these impertinences — and I have authority to assure those offenders against decency that . . . the managers and performers will be forced . . . to the disagreeable necessity of insisting on their absenting themselves from a place where they do nothing but give offence or . . . of hiring the adjacent room for the convenience of such whose conduct will not bear the eye of the public . . . "[33]

In 1793 a series of six subscription concerts was given in New York. The programs of this series are interesting, for not only did they offer the vocal talents of singers of the Old American Company and works by Pleyel and Stamitz, but "they also included works of Vanhall and Haydn played from manuscript. On the program of the fifth concert (March 25th), America probably heard its first performance of what was termed Haydn's *Passion of our Saviour,* identical with the famous *Seven Words,* composed for the Cathedral of Cadiz in 1785, and later performed in London as the *Passione Instrumentale.*"[34]

By the 1850s New York was as much the professional music center of the United States as it is today. Mixed instrumental and vocal concerts were usual, featuring one principal, with a number of assistants. Although many of the concerts involved piano playing in a prominent way, before 1870 there were hardly any piano recitals in New York. Even the renowned virtuosos at that time felt the need of being relieved several times in the course of a concert in order to make fresh entrances.

Although the first public concert in Philadelphia of which there is record took place in 1757, the first really ambitious concert in the United States was given somewhat later in this city, according to Louis C. Elson (May 4, 1786). In the Philadelphia correspondence of the *Salem Gazette* an account of this concert appeared:

> On Thursday, the 4th of May, at the Reformed German Church, in Race Street, was performed a Grand Concert of vocal and instrumental

> musick, in the presence of a numerous and polite audience. The whole band consisted of 230 vocal and 50 instrumental performers, which, we are fully justified in pronouncing, was the most complete, both with respect to number and accuracy of execution, ever, on any occasion, combined in this city, perhaps, throughout America . . .
>
> Nearly one thousand thickets were sold at two-thirds of a dollar each, and the net proceeds, after deducting for necessary expenses [sic], have been delivered to the managers of the Pennsylvania Hospital, Philadelphia Dispensary, and overseers of the Poor, to be applied by them for the use of said institutions and unprovided poor."

The influence of European composers, especially Handel, began to be noticed in concert programs in the United States in the late eighteenth century, and by the beginning of the nineteenth century, programs were presented which consisted primarily of English music with a few German works occasionally interspersed.

The taste of many American concert-goers was not particularly elevated, however. At a public concert in the early nineteenth century in New York, an orchestra began to play a Haydn work when the audience broke into protest and someone cried, "Aw, quit that; give us 'Bonyparte Crossing the Rhine.' "[38]

SUMMATION: The Public Concert Emerges

The first public concert halls were hardly larger than a spacious drawing room, and the first public audiences were of a select social class (often nobility, or guests of nobility). A high price of subscription, a small group of performers, and an audience comprised of persons who were for the most part mutually acquainted — these were frequently prerequisites for giving a public concert in the eighteenth century. The essential difference between the earliest public concerts and those of the courts was that there was an admission fee charged for the public concerts (and not, of course, for court concerts).

Programs in early public concerts might have included solos, duets, trios, concertos, choruses, and symphonies, presented often in a casual order. The orchestra was often comprised of members from the theater group, and the chorus came from a church or cathedral. The atmosphere was intimate and personal, what one might today call a "chamber music" atmosphere. The standard of performance, from present viewpoints, was roughly prepared. The scores of the composers (including those of Bach and Handel) admitted wide variations of instruments. The music was almost entirely contemporary, much of it having been written for the particular occasion by the performer-composers. There were few printed works, so parts had to be copied for many performances.

In the performance of music, passages were usually either loud or soft; "there was little detailed variation or careful balance of tone."[39] Solo playing was expressive, but for the mass of players the usual effects were those of strong contrasts.

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The audience was convinced of ... though it did not come to concerts to be educated. The desire of the audience was to be pleased, and surprise and delight were the most popular emotions — "surprise at a new dexterity, delight in a warm tone or in a taking phrase."[40] The age of the virtuosi, narrow in emotional range, was emerging. The technical skill of instrumentalists was not as specialized as that of the singers, but the former were quickly improving. Although virtuoso concerts were considered in the eighteenth century to be on a lower level than concerts given by local musical organizations, "this gradual development of technical skill was the foundation of the concert music which was eventually to occupy so paramount a place in the progress of pure music."[41]

> Thus, during the latter half of the eighteenth century ,middle-class townspeople became thoroughly familiar with the habit of attending public musical performances in return for an admission fee. The older words *"collegium musicum"* and *"academy"* went out of use, and such events were generally called concerts," as they have been ever since.
>
> Concerts were clearly a middle-class institution. In former days a burgher might possibly have been able to hear skilled execution of complex music either in church or — if he were so exceptionally lucky — as a nobleman's invited guest. Now he was free to buy himself entrance to a more or less professional concert for a moderate sum of money, just as he could buy a bolt of ribbon at a dry-goods store. Despite the "idealists," music became, to a considerable extent, an article of commerce. Here aagin we see the formation of an anonymous "public."
>
> . . . In the latter half of the century, in a few localities, "enlightenment" and "humanity" had begun to round off a few of the sharpest edges of orthodox class segregation; for in commercial Leipzig, at least, noble individuals did occasionally come to the public meetings of the citizenry."[42]
>
> While the private patronage of music by princes and nobles remained the chief source of livelihood to the musician, the progress of public concert institutions was impeded. The breakdown of the system of patronage and the change of tone and temper which the Napoleonic wars brought to the Europe of the 19th century stimulated the increase of concerts . . . Improved transport by road and sea, particularly by steam power, facilitated the careers of travelling virtuosi, and in the 19th century concert-giving became an international industry."[43]

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FOOTNOTES

[1] "Academies," in this context, were not teaching institutions, but what we would now call learned societies.

[2] Eric Blom defines a *collegium musicum* as "An association for the performance of chamber and chamber-orchestral music in various German towns, especially Hamburg and Leipzig, during the first half of the 18th century . . . These institutions were mainly connected with universities — hence no doubt their Latin name — and they have remained a feature of German universities to the present day."

Eric Blom, "Collegium Musicum," *Grove's Dictionary of Music and Musicians*, 5th ed., ed. Eric Blom (London: Macmillan and Company, Ltd., 1954), II, 375-76.

[3] Robert Elkin, *The Old Concert Rooms of London* (London: Edward Arnold, Ltd., 1955), p. 13.

[4] Henry Davey, *History of English Music* (2d ed.; London: J. Curwen and Sons, Ltd., 1921), p.256.

[5] Elkin, *op. cit.*, p. 14.

[6] *Ibid.*, p. 17.

[7] As quoted in: *Ibid.*, pp. 18-19.

[8] Willi Apel, "Concert", *Harvard Dictionary of Music* (Cambridge, Massachusetts: Harvard University Press, 1960), p. 170.

[9] "Britton was, despite his lowly avocation . . . a collector of musical instruments, ancient and modern, and of books, manuscripts, prints and drawings connected with subjects such as mystic divinity, the philosopher's stone, chemistry, astrology and magic; and he was . . . a keen amateur of music . . ."

Elkin, *op. cit.*, p. 23.

[10] Ernest Walker, *A History of Music in England*, 3d ed., rev. J. A. Westrup (London: Oxford University Press, 1952), p. 178.

[11] Elkin, *op. cit.*, p. 29.

[12] *Roger North on Music: Being a Selection from His Essays Written During the Years c. 1695-1728*, ed. John Wilson (London: Novello and Company, Ltd., 1959), p. 353.

[13] Elkin, *op. cit.*, p. 30.

[14] The correct date of the establishment of the Hickford's Room concerts is given by two historians:

J. A. Fuller-Maitland, "Concert", *Grove's Dictionary of Music and Musicians*, 5th ed., ed. Eric Blom (London: Macmillan and Company, Ltd., 1954), II,391.

Mrs. Robert Harrison, "Hickford's Room," *Grove's Dictionary of Music and Musicians*, 5th ed., ed. Eric Blom (London: Macmillan and Company, Ltd., 1954), IV, 273.

In another article, the date 1714 is offered for the opening of Hickford's Room (which could be due to the calendar change—about 1750 in England, the legal year's beginning changed from March 25 to January 1):

Kathleen Dale, "London: Public Concerts, 17th and 18th Centuries," *Grove's Dictionary of Music and Musicians*, 5th ed., ed. Eric Blom (London: Macmillan and Company, Ltd., 1954), V, 375.

[15] Mrs. Robert Harrison, *op. cit.*, p. 275.

[16] As quoted from the original source in: Elkin, *op. cit.*, p. 47.

[17] Arthur Loesser, *Men, Women and Pianos: A Social History* (New York: Simon and Schuster, 1954), p. 236.

[18] The correct date of 1783 is given in two sources:

William H. Husk, "Hanover Square Rooms," *Grove's Dictionary of Music and Musicians*, 5th ed., ed. Eric Blom (London: Macmillan and Company, Ltd., 1954), IV, 65.

Dale, *op. cit*, p. 376.

But, the incorrect date of 1785 is given for the establishment of the Professional Concerts in:

J. A. Fuller-Maitland, *op. cit.*, p. 391.

[19] Loesser, *op. cit.*, p. 236.

[20] *Ibid.*, p.238.

[21] Charles Mackeson, "Ancient Concerts," *Grove's Dictionary of Music and Musicians*, 5th ed., ed. Eric Blom (London: Macmillan and Company, Ltd., 1954), I, 144.

[22] Loesser, *op. cit.*, p. 242.

[23] *Ibid.*, p. 91.

[24] Famous conductors of the *Gewandhaus* concerts have included Mendelssohn, under whom the concerts first gained international recognition, Furtwaengler, and Bruno Walter.

[25] George Dyson, *The Progress of Music* (London: Oxford University Press, 1932), p. 160.

[26] *Ibid.*

[27] John Tasker Howard, "American Music," *Harvard Dictionary of Music* (Cambridge, Massachusetts: Harvard University Press, 1960), p. 30.

[28] As quoted in: John Tasker Howard, *Our American Music: Three Hundred Years of It* (New York: Thomas Y. Crowell Company, 1931), p. 18.

[29] *Ibid.*

[30] *Ibid.*, p. 65.

[31] Loesser, *op. cit.*, p. 436.

[32] *Ibid.*, p. 437.

[33] As quoted in: Howard, *Our American Music*, *op. cit.*, pp. 27-28.

[34] As quoted in: *Ibid.*, pp. 29-30.

[35] As quoted in: *Ibid.*, p. 30.

[36] *Ibid.*, p. 34.

[37] As quoted from the original source in: Louis C. Elson, *The History of American Music*, rev. Arthur Elson ("The History of American Art," No. 2; New York: The Macmillan Company, 1925), p. 24.

[38] Helen A. Dickinson and Clarence Dickinson, *Excursions in Musical History* (New York: The H. W. Gray Company, sole agents for Novello and Company, Ltd., 1917), p. 157.

[39] Dyson, *op. cit.*, p. 154.

[40] *Ibid.*, p. 155.

[41] *Ibid.*, p. 158.

[42] Loesser, *op. cit.*, pp. 94-95.

[43] J. A. Fuller-Maitland, *op. cit.*, p. 391.

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A STUDY OF THE RELATION BETWEEN OBJECTIVE AND SUBJECTIVE MEASUREMENT OF THE QUANTITATIVE DIFFERENCES IN TONE QUALITY AMONG VARIOUS MAKES OF CLARINETS

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Introduction

Music instrument manufacturers continually seek improvements in the quality of their products. This is motivated by consumer demands and sustained by economic necessity of survival in the competitive business world. As a result, the introduction and promotion of a new model within a line of instruments takes on a dimension somewhat similar to the fanfare accorded the yearly model changes in the automobile industry. Many claims are made as to the superiority of instrument design, construction, materials, intonation, consistency of register, and *tone quality*. The latter, tone quality, is probably the most controversial and least understood aspect of any of the above-mentioned characteristics.

Excluding the consideration of tone quality for the moment, differences among various makes and models of clarinets are readily perceivable. Beside the obvious, namely design, construction, and material, professional players purport differences in the "feel" of individual instruments with respect to blowing resistance, evenness of register, and intonation. Less conclusive are those claims which maintain that unique differences in tone quality also exist in a direct, perceptible way.

Purpose of Study

It was this concern as related to my interest in the clarinet which prompted me to design an experimental study which would attempt to (1) objectively measure the quantitive differences in tone quality among various makes and qualities of clarinets to find some pattern in their tonal spectra which might serve to distinguish one make or model from another; (2) to construct a listening test from the recorded tone samples to determine if listeners could judge the comparisons of instruments to be "same" or "different" at a level of significance. Through further statistical analysis, I also sought to determine the effect that the register had on the listener's ability to make tone quality judgments — whether there was any significant difference between the "professional" line instruments and the "student" line instruments; i.e., could listeners discriminate between the two, and to determine if listeners possess different abilities in being able to judge clarinet tones!!

List of Related Studies

Past studies of timbre (tone quality) as related to the clarinet have been conducted mostly in the area of objective quantitative analysis of the general tone spectra for the entire range of the

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clarinet. My review of the following experiments was particularly healpful:

Fletcher, Harvey, "Loudness, Pitch, and the Timbre of Musical Tones and their Relation to the Intensity, the Frequency, and the Overtone Structure." *J. Acoust. Soc. Amer.*, VI, 2 (1934)

Ghosh, R. N., "Theory of the Clarinet," J. Acoust. Soc. Amer., IX, — (1938)

Lehman, Paul R., "The Harmonic Structure of the Tone of the Bassoon," Seattle, Washington: Berdon, Inc. (1965)

McGinnis, C. S., Hawkins, H., and Sher, N., "An Experimental Study of the Boehm Clarinet," J. Acoust. Soc. Amer., XIV, 4 (1943)

Parker, Sam, "Analysis of the Tones of Wooden and Metal Clarinets," J. Acoust. Soc. Amer., XIX, 3 (1947)

Saunders, F. A., "Analysis of the Tones of a Few Wind Instruments,'" J. Acoust. Soc. Amer., XVIII, 2 (1946)

The findings of the above studies generally agree on a basic tone spectrum produced by the clarinet:

1) The clarinet behaves like a closed pipe in the chalameau register having a tone spectrum consisting of strong odd-numbered harmonics (1, 3, 5, 7, 9). Even numbered harmonics (2, 4, 6, etc.) become more prominent in the clarion and altissimo register.
2) The greatest abundance of harmonics are generated in the chalameau register. The tone spectrum becomes simpler in harmonic content as you ascend into the clarion and altissimo register.
3) An increase in the intensity of air produces stronger and more numerous harmonics in the total tone spectrum.

Though the studies of Saunders, McGinnis, and Parker revealed many common likenesses found in all clarinets regardless of quality, make, or player variables, there were differences in detail as to the relative strengths of the harmonies. It has since been a matter of concern to identify those variables which cause differences in harmonic content.

Parker utilized a mechanical blowing device of different sizes, shapes, and materials and came to the conclusion that the following variables seem to affect the tone spectra and resulting timbres of clarinets:

1) The placement and pressure of the player's embouchure on the reed,
2) The blowing pressure intensity (FF to PP),
3) The position of the tone in the registers.

In analyzing the tonal spectra of wooden and metal clarinets, Parker found that there was no appreciable difference between the harmonic content of these instruments.

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Experiments in the subjective measurement of tone quality have been conducted more with string instruments than with winds. Studies conducted by, and reported by, F. A. Saunders reveal that most listeners could not discriminate the difference between sounds produced by a Stradivarius violin and another violin when played by the same performer. He observes that very few listeners possess a highly discriminating enough ear to detect differences of this kind.

Procedure for Recording Sample Tones

Tone samples were taken from six clarinets of varying makes and qualities. The six instruments were secured from a local music dealer and were shop-adjusted prior to the test. The makes and models are as follows:

Instrument A	Buffet Crampon	(Professional)
Instrument B	Selmer Series 9	(Professional)
Instrument C	Leblanc Classic	(Professional)
Instrument D	Selmer Bundy	(student line resonite)
Instrument E	Leblanc Vito	(student line resonite)
Instrument F	Conn 16N	(student line resonite)

My first concern in securing the tone samples was to control those variables which might prejudice the results of the experiment. As previously observed in Parker's studies, differences in tone spectra on a single instrument appear to be caused by variables unique to individual clarinet players. Since I did not have access to an artficial blowing device to generate tone samples on the respective instruments, I secured the services of a professional clarinet player. The player used his own reed and mouthpiece for the recording of all the tone samples.

Recording conditions and procedure were judged to be variables which needed to be rigidly controlled. I used a modified recording procedure as described by Lehman in his dissertation, "The Harmonic Structure of the Tone of the Bassoon," and was fortunate enough to have the full use of the recording facilities at the Central Institute for the Deaf in St. Louis.

The facilities at the Institute included an anachoic chamber, an Altec, model 633A microphone, an Ampex model 401A full track tape recorder, a sound pressure DB meter, a VU meter positioned in front of the player, and a two-way communication system between the player in the chamber and the recording technician outside of the chamber. Full technical assistance was given by members of the Institute staff.

The recording session took two hours and was conducted as follows. The microphone was positioned on a boom approximately equidistant from all the tone holes of the clarinet on a plane with

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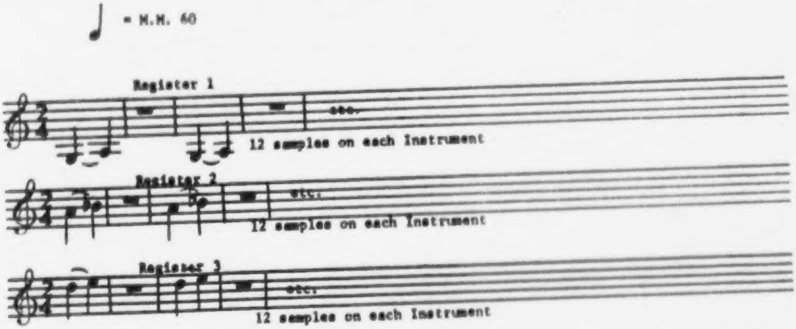
the clarinet. The player performed all tone samples in a standing position and was placed so his instrument was 24 inches away from the microphone. Measurements were taken before each test series to maintain this uniform distance.

All instruments were tuned prior to the recording session and re-adjusted preceding the recording of each register. A Conn Strobotuner was used to establish the pitch level.

Each tone sample consisted of a 2-note slurred pattern taken in three registers of the clarinet. The three registers included the chalameau, (g3-a4), throat (upper chalameau) (a5-Bb5), and the clarion (d5-e5). (see Figure 1)


♩ = M.M. 60
Register 1
etc.
12 samples on each Instrument
Register 2
etc.
12 samples on each Instrument
Register 3
etc.
12 samples on each Instrument

Twelve tone samples were recorded in each of the three registers for each of the six clarinets. This represents a total of 216 tone samples which were later analyzed on a sonograph and then spliced into combinations of exercises for subjective measurement by listeners.

Tone samples from Register 1 were recorded first. These samples were recorded at a 83 DB level with 2 DB attenuation. A DB meter was used to check the sound pressure level at the microphone and a VU meter was calibrated to produce a nearly zero reading at maximum intensity. The meter was placed directly in front of the player so he could view it as he played.

The player was instructed to blow a firm tone at dynamic level he could maintain throughout the session. We found that though we heard little or no change in intensity level from one pitch to the next, the VU meter registered a significant fluctuation ranging from 1 to 3 decibels. After several trial runs, the player quickly adapted to the level changes and was consistently able to produce approximately the same intensity levels for all samples in each register.

The recording of the 2nd register and 3rd register required re-adjustment of the recording level in that these pitches produced successively higher intensity levels than in register 1. The 2nd register was recorded at 85 DB with 8 DB attenuation and the 3rd register was recorded at 88 DB level with 12 DB attenuation.

Objective Measurement of Tone Spectra and Results

Several tone samples representing each instrument in each register were randomly selected and analyzed on the sonograph. The sonograph converts and analyzes the steady state tone into a graphic display of amplitude as a function frequency in a point of time. The sonograph has a maximum intensity band width of 30 DB. Therefore, the frequency-amplitude displays represent only relative harmonic strengths, not actual one-to-one relationships.

An ordinary ruler in millimeter units was used to measure the individual harmonic strengths. The means and standard deviations were computed for selected tone samples in such a way as to compare: (1) the degree of variance found in the harmonic structure among the six instruments in each of the three registers, (tables 1, 2, & 3), (2) the degree of variance in harmonic structure of tone samples produced by the same instrument, (table 4), and (3) the degree of variance in the harmonic structure of a single tone sample taken at three points in time to determine the phase relationship found within the sample, (table 4).

The limited analysis of tone spectra suggests that: (a) there is a greater variance in tone spectra among different instruments than that found between tone samples produced by the same instrument. (b) The tone spectra pattern of professional instruments do not vary significantly from the tone spectra pattern of student line instruments. This invalidates the assumption that professional brands possess a tone spectra markedly different from that produced by student line brands. In fact, student line instruments in several comparisons seem to match professional line instruments better than professional line instruments match themselves. (c) The phase relationship within a steady state tone produced variances in the spectrum which were very small, nearly the same as variances found between tone samples produced by the same instrument. This suggests that the professional player demonstrated a consistency of tone production throughout the recording session.

Construction and Administration of the Listening Test

The design of the listening test required the splicing of 216 tone samples into 108 listening exercises which paired tone samples in combinations of their being "same" or "different." A six by six matrix was used in pairing the combination of tone samples for each register. Each register contained 36 exercises of which 6 were "same" pairings and 30 exercises were "different" pairings. The composite total for the 3 registers included 18 "same" exercises and 90 "different" samples. The exercises were randomly assigned an order in the test. In the actual splicing procedure, several samples were found not to be usable and therefore the test consisted of 105 exercises.

The lecture room at the Central Institute for the Deaf was used for the listening test. Loudspeakers were suspended directly over the listeners. The tape was played on the same Ampex recorder which was used in the recording of the tone samples.

It was the desire of this author to secure an equal number of "professional" and "non-professional" clarinet players and to compare their scores. However, I was only able to recruit five "professional" clarinet players and one "non-professional."

The listeners were given test sheets with written instructions which were augmented by verbal instruction. They were to judge each exercise as being "same" or "different." If possible, listeners were instructed to use their own terminology to describe the differences they noted within the exercises judged to be "different." If value judgments were to be made, a "W" was to be used to indicate "worse," a "B" was to be used to indicate "better."

For purposes of validation, it would have been desirable to give five replications of the test. However, due to time considerations and the faitgue expressed by the listeners after the third replication, it was decided not to continue another replication. Each replication of the test took 27 minutes and a 10 minute break was given in between each replication.

Interpretation of the Listening Test Results

The results of the listening test appear in table 5. The average score of correct responses for the six listeners was 68%. The range of individual scores for each replication varied from a low of +52% to a high of +80%. It is interesting to note that Listener C, the non-professional clarinet player, consistently scored higher on each replication of the test.

The average percent of correct responses to "different" exercises was +68.5% and to the "same" exercises was +65.3%.

A chi square test was run to determine if there was a difference between theoretical expectancy and test results beyond what might reasonably be expected to occur by chance. The results of X2 = 188.31 is highly significant at less than the .01 level of significance. The null hypothesis is thereby rejected clearly indicating that listeners can detect differences of tone quality.

An analysis of variance was run to determine if an interaction was occuring within the sub-groups (registers, combinations of professional and student line-instruments, and subjects) other than what could be expected on the basis of chance sampling. F test results indicate that: (a) Listeners as a group did not significantly score any better in one register than in another. (b) were not able to judge tone quality differences between professional and student line instruments any better than what would be expected by chance. (c) There was a significant difference at less than .01 level among listeners in their ability to discriminate tone quality differences.

I believe it is important to note that the above statistical involving chi square and analysis of variance were undertaken with some modification of raw score results. It was observed that seven "different" exercises had a 100% correct response. In checking, I found that all exercises included the F2 instrument tone samples (F instrument, 2nd register). I further proceeded to trace the other exercises having an F2 instrument tone sample and found three more "different" exercises which had a 94% correct response.

Using a strobotuner, the pitch of the F2 sample was compared with the pitch of the sample with which it was matched and found there was a difference of 20 to 30 cents. These ten exercises involving the F2 instrument were viewed as being invalid on the basis that decisions were influenced by the pitch discrepancy rather than by the tone quality. Adjustments in the statistical analysis were therefore made to compensate for the obvious effect that they would have toward biasing the statistical data. The mean of the total correct responses to "different" exercises was taken and this value was assigned all exercises involving the F2 "different" exercises.

It is worth reporting that twelve other "different" exercises were judged correctly 94% of the time by the listeners. I also checked their pitch with the strobotuner and found there to be no significant pitch difference; therefore, other factors must explain this degree of consistency of judgment.

One final observation has to do with the listeners' verbal descriptions of perceived differences and their reaction to the test. Most listeners elected to describe differences as being "better" or "worse". A lack of time did not make it possible to analyze the results of these responses. Some listeners did indicate that several variables other than tone quality were affecting their judgment. Several of the variables mentioned were: (1) changes of tempo found between tone samples within an exercise, (2) onset and decay properties of tone camples (attack and release), (3) listeners felt tired, (4) intensity changes within exercises, and (5) influenced by the writing of other listeners.

Conclusions

The above listener comments suggest that judgments of tone quality are strongly influenced by other variables which may need to be controlled more rigidly than was the case with this test. Analysis of the test results and spectra of various sample tones, however, suggest that the very elements which the listener claims affect his decision-making are often contrary to his actual response.

Whatever other variables were present in the "different" samples which may have prejudiced the listener to judge "different" exercises correctly as being "different" has not been fully explored and determined. The only evidence to date which has been quantitatively documented is the tuning of the F2 instrument. It can be assumed with a great deal of certainty that these ten exercises involving F2 instrument contain an intonation variable which has strongly influenced the decisions of the listeners.

In order to resolve the questionable validity of the listening test, a more detailed analysis of all tone samples seems to be in order to either confirm or deny the presence of other variables which significantly influence the listener's judgment of tone quality.

I believe it is highly significant to note that objective and subjectve measurement of clarinet tones concur on several points. (1) There seems to be no evidence to suggest that professional quality instruments have tone qualities significantly different from those of student line instruments. (2) There is a greater degree of variance of tone spectra among different instruments than that produced by a single instrument. Listeners are able to perceive these differences or sameneses at a less than .01 level of significance. Further interpretation of the listening test results indicate that listeners possess different and varied abilities in judging tone quality. Again *this is statistically signficantly* at less than the .01 level.

Finally, there seems to be no evidence which suggests that listeners are able to judge tone quality any better in one register than another.

In conclusion, it would appear that this experiment requires more replications of the listening test to be given to a broader population of professional and non-professional clarinet players, further analysis of instrument tone spectra, and further statistical analysis which would enable the researcher to state with a greater degree of confidence the confirmation or rejection of the findings to date.

BIBLIOGRAPHY

Benade, Arthur H., *Horns, Strings and Harmony*, Garden City, N.Y.: Doubleday & Co., Inc., 1960.

Benade, Arthur H., *The Physics of Woodwinds*, Scientific American, Vol. 203, 4 (1960).

Culver, Charles A., *Musical Acoustics*, New York: McGraw-Hill Book Company, Inc. (1956).

Fletcher, Harvey, *Loudness, Pitch and the Timbre of Musical Tones and Their Relation to the Intensity, the Frequency, and the Overtones Structure*, J. Acoust. Soc. Amer., VI, 2 (1934).

Ghosh, R. N., *Theory of the Clarinet*, J. Acout. Soc. Amer., IX,— (1938).

Hutchins, Carleen Maley, *Founding a Family of Fiddles*, Physics Today, Vol. 20, 2 (1967).

Lehman, Paul R., *The Harmonic Structure of the Tone of the Bassoon*, Seattle, Washington: Berdon, Inc. (1965).

Lundin, Robert W., *An Objective Psychology of Music*, New York, Ronald Press Co. (1963).

McGinnis, L. S. Hawkins, H., and Sher. N., *An Experimental Study of the Boehm Clarinet*, J. Acoust. Soc. Amer., XIV, 4 (1943).

Parker, Sam, *Analysis of the Tones of Wooden and Metal Clarinets*, J. Acoust. Soc. Amer., XIX, 3 (1947).

Saunders, F. A., *The Mechanical Action of Instruments of the Violin Family*, J. Acoust. Soc. Amer., XVII, 3 (1946).

Saunders, F. A., *Analysis of the Tones of a Few Wind Instruments*, J. Acoust Soc Amer., XVIII, 2 (1946).

Stubbins, William H., *The Art of Clarinetistry*, Ann Arbor, Michigan: Ann Arbor Publishers (1965).

Winckel, Fritz, *Music, Sound, and Sensation*, New York: Dover Publications, Inc. (1967).

TONE SPECTRA OF SIX INSTRUMENTS
REGISTER 1

Instruments, Pitch g3								
Partial	A	B	C	D	E	F	ME	SD
1	28	28	28	26	26	26	27	1.1
2	—	—	—	—	—	—	—	—
3	24	24	24	22	23	23	23	.9
4	5	7	5	3	4	2	4	1.8
5	24	24	25	23	22	23	23	.9
6	13	19	15	15	13	15	15	2.2
7	25	17	26	15	24	21	21	4.5
8	7	—	5	—	1	5	3	2.4
9	7	12	9	11	9	6	9	2.3
10	—	—	5	—	—	2	1	2.5
11	8	11	13	9	8	12	10	2.1
12	3	10	10	6	8	10	8	2.8
13	10	11	14	12	12	10	11	1.6
14	6	8	11	7	7	9	8	1.8
15	5	10	7	7	4	8	7	2.1
16	11	11	13	5	10	13	10	3.0
17	11	12	9	6	8	9	9	2.1
18	11	11	5	—	3	7	6	4.4
19	8	11	9	7	2	4	7	3.3
20	3	6	—	—	1	3	2	2.3
21	4	7	6	1	4	3	4	2.1
22	2	4	2	1	1	2	2	1.1
23	—	—	5	—	1	—	1	2.0
24	—	—	5	—	—	4	1	2.4
25	—	—	5	—	3	1	1	2.1
26	—	—	1	—	—	—	—	.8
27	—	—	—	—	2	—	—	.6
	Average Standard Deviation							2.0

Instruments, Pitch a4								
Partial	A	B	C	D	E	F	ME	SD
1	28	28	28	27	27	28	28	.6
2	5	3	4	—	2	1	2	2.0
3	26	25	25	25	25	26	25	.6
4	10	10	12	7	10	12	10	1.8
5	25	25	25	24	24	26	25	.8
6	20	10	19	7	19	8	14	6.1
7	3	12	9	12	10	5	8	3.8
8	2	3	6	7	—	—	3	3.0
9	11	10	12	9	11	16	11	2.5
10	—	5	3	7	7	10	5	3.5
11	12	12	16	16	9	16	12	3.0
12	4	7	10	9	12	13	9	3.3
13	5	6	8	1	6	6	5	2.4
14	1	6	6	2	6	8	5	2.7
15	8	11	11	5	8	12	9	2.6
16	8	14	14	5	8	10	10	3.6
17	11	9	11	7	12	11	10	1.8
18	15	10	12	5	13	13	11	3.5
19	5	5	10	4	11	9	7	9.2
20	5	—	7	—	4	2	3	2.8
21	—	—	—	—	—	—	—	—
22	Average Standard Deviation							2.9
23								
24								
25								
26								
27								

Table 2
TONE SPECTRA OF SIX INSTRUMENTS
REGISTER 2

Instruments, Pitch a5								
Partial	A	B	C	D	E	F	ME	SD
1	27	27	27	28	27	28	27	.6
2	9	8	5	7	10	11	8	1.8
3	25	23	24	26	24	25	24	1.2
4	22	17	17	19	20	20	19	1.9
5	18	21	21	23	17	20	20	2.2
6	11	5	—	8	—	16	6	6.3
7	19	22	19	21	22	23	21	1.7
8	—	11	11	—	17	12	8	7.0
9	—	—	3	—	2	—	1	1.3
10	—	—	2	—	2	—	1	1.1
11	6	—	—	0	—	5	3	3.6
12	—	—	—	—	2	—	0	.8
13	—	—	—	3	—	—	0	1.3
14								
15								
16								

Instruments, Pitch Bb5								
Partial	A	B	C	D	E	F	ME	SD
1	28	27	27	27	27	28	27	.6
2	8	9	5	8	7	11	8	1.7
3	22	22	21	22	22	22	22	.4
4	16	17	17	20	17	15	17	1.7
5	11	16	11	14	15	14	13	2.1
6	12	14	9	12	13	19	14	3.4
7	2	7	—	7	7	10	5	3.8
8	5	—	—	—	—	—	1	2.4
9	**	—	—	—	6	2	1	2.4
10	—	7	6	—	—	—	2	3.4
11								
12								
13								
14								
15								
16								

Table 3
TONE SPECTRA OF SIX INSTRUMENTS
REGISTER 3

Instrument, Pitch d5								
Partial	A	B	C	D	E	F	ME	SD
1	28	28	28	28	28	28	28	—
2	19	24	20	21	18	22	21	2.2
3	6	14	11	10	13	9	10	2.9
4	—	7	8	3	—	9	4	4.1
5	14	15	17	11	18	17	15	2.6
6	18	19	17	13	22	19	18	3.0
7	7	6	13	7	12	6	8	3.2
8	6	9	15	5	11	9	9	3.6
9	2	—	2	—	4	3	2	1.6
10								
11								

Instrument, Pitch e5								
Partial	A	B	C	D	E	F	ME	SD
1	30	30	30	30	30	30	30	—
2	25	15	23	17	25	17	20	4.5
3	18	19	18	17	13	23	18	3.2
4	12	15	19	16	20	16	16	2.9
5	17	22	18	18	18	18	19	2.0
6	22	22	19	20	23	19	21	1.7
7	—	—	17	—	15	15	8	8.6
8	1	7	13	—	12	11	7	5.7
9								
10								
11								

TABLE 4

MULTIPLE SPECTRA OF TWO TONE SAMPLES
INSTRUMENT D1

	Pitch g3												Pitch a4											
	Spectra, Sample 1					Spectra, Sample 2					ME	SD	Spectra, Sample 1					Spectra, Sample 2					ME	SD
Partial	1	2	3	ME	SD	1	2	3	ME	SD			1	2	3	ME	SD	1	2	3	ME	SD		
1	27	27	27	27	—	26	27	27	27	.7	27	.4	28	28	27	28	.7	28	27	27	27	.7	27	.8
2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3	24	24	24	24	—	24	25	25	25	.7	24	.6	25	26	26	26	.7	26	25	25	25	.7	25	.8
4	7	6	3	5	2.1	4	4	—	3	2.3	4	2.4	8	9	7	8	1.0	8	7	8	8	.7	8	.8
5	24	25	25	25	.7	24	25	25	25	.7	25	.4	25	25	27	26	1.2	26	25	26	26	.7	26	.9
6	20	19	17	19	1.6	23	18	15	19	4.1	19	2.7	10	11	9	10	1.0	11	10	10	10	.7	10	.8
7	18	20	21	20	1.6	25	21	21	22	2.3	21	2.3	14	14	13	14	.7	15	13	14	14	1.0	14	.8
8	—	—	—	—	—	—	—	—	—	—	—	—	8	9	7	8	1.0	6	7	7	7	.7	7	1.1
9	11	12	13	12	1.0	12	13	14	13	1.0	12	1.2	10	10	11	10	.7	13	11	11	12	1.2	11	1.1
10	2	1	1	1	.7	—	—	—	—	—	1	.9	9	9	10	9	.7	9	8	6	8	1.6	8	1.5
11	11	12	13	12	1.0	12	12	15	13	1.7	12	1.5	12	12	13	12	.7	12	13	12	12	.7	12	.6
12	8	11	11	10	1.7	9	11	8	9	1.6	10	1.5	14	15	13	14	1.0	15	14	13	14	1.0	14	.9
13	15	15	15	15	—	14	15	17	15	1.6	15	1.0	3	2	—	2	1.6	3	3	5	4	1.2	3	1.7
14	12	16	14	14	2.0	13	14	9	12	2.6	13	2.4	7	7	8	7	.7	9	9	7	8	1.2	8	1.0
15	11	11	9	10	1.2	8	9	13	10	2.6	10	1.8	3	5	—	3	2.5	3	6	8	6	2.5	4	2.8
16	15	14	14	14	.7	12	14	13	13	1.0	14	1.1	9	8	11	9	1.6	11	9	7	9	2.0	9	1.6
17	14	14	11	13	1.7	8	8	13	10	2.9	11	2.8	7	9	6	7	1.6	8	9	10	9	1.0	8	1.5
18	7	7	10	8	1.7	8	9	9	9	.7	8	1.3	6	6	10	7	2.3	9	8	8	8	.7	8	1.6
19	6	8	7	7	1.0	3	4	4	4	.7	5	2.0	10	9	8	9	1.0	11	11	9	10	1.2	10	1.3
20	—	—	—	—	—	—	2	6	3	3.1	1	2.4	—	—	1	—	.7	1	—	—	—	.7	—	.6
21	—	7	8	5	4.3	6	8	6	7	1.2	6	3.0	—	—	—	—	—	—	—	—	—	—	—	—
22	6	3	7	5	2.1	5	6	10	7	2.6	6	2.3	—	—	—	—	—	—	—	—	—	—	—	—
23	3	6	9	6	3.0	4	6	4	5	1.7	5	2.2	—	—	—	—	—	—	—	—	—	—	—	1.1
24	4	4	1	3	1.7	4	2	4	3	1.2	3	1.3												
25	—	4	7	4	3.5	1	5	0	2	2.6	3	2.9												
26	1	1	—	1	.7	—	—	—	—	—	0	.6												
27																								

TABLE 5

TABULATION OF LISTENER SCORES

Classification		1st Replication	2nd Replication	3rd Replication	Average Percent
Professional	Listener A	*+61 **+59%	+65 +62%	+65 +62%	+61%
Professional	Listener B	+69 +66%	+66 +63%	+74 +70%	+66%
Non-Professional	Listener C	+78 +74%	+84 +80%	+83 +79%	+78%
Professional	Listener D	+66 +63%	+81 +77%	+76 +72%	+71%
Professional	Listener E	+83 +79%	+82 +78%	+78 +74%	+77%
Professional	Listener F	+55 +52%	+63 +60%	+64 +61%	+58%
		Average Score for All Listeners			+68%

* Number of correct responses out of a possible 105 exercises.
** Percent of correct responses out of a possible 105 exercises.

OTHER STATISTICAL DATA

1) Average percent of correct "different" responses 68.5%

2) Average percent of correct "same" responses 65.3%

3) Average percent of correct responses of exercises matching professional instruments with student line instruments 67%

4) Average percent of correct responses of exercises matching same quality instruments (pro-pro; stu-stu) 70%

*** The following three exercises were not included in the test because of problems which developed in the splicing of the tape.

F1 - A1
E1 - E1
F3 - A3

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AN APPLICATION OF CERTAIN LEARNING THEORIES TO THE TEACHING OF MUSICAL RHYTHM

John Milak, Washington University

INTRODUCTION

The purpose of this paper is to examine and apply certain basic types of learning to certain aspects of music education and to build and test a sequence of instruction upon ideas and concepts derived from these types of learning. The learning hierarchy used in this paper is based principally on models of learning structures as set forth by Robert Gagne.[1] The "raison d'etre" of this paper is a quest for more knowledge of relating particular learning theories to music education. To date, the author knows of no comparable attempt to relate a structured learning hierarchy to a specific area of music education. What has been done is that certain learning principles have been applied to teaching in certain musical situations. The following is a discussion of two such experiments which incorporate these principles.

Neidlinger[2] attempts to apply certain of David Ausabel's and Jean Piaget's principles to teaching elementary general music. He divides music into dimensions which include pitch, timbre, simultaniety, loudness, and time; and the structures learning situations as a matrix of interrelated facts about specific musical stimuli in terms of these dimensions. Principles of child development by Piaget are used as an indication that the children in this experiment should be able, at their level of development, to understand these complex relations. Two of Ausabel's theories are used.

> 1. His *theory of subsumption,* that the content of the learning task must be presented to the learner, rather than his discovering it for himself, is used to validate Neidlinger's approach of breaking music into its elements.
>
> 2. His concept of the *advance organizer* is used to provide a related concept or an anchoring focus for the musical concepts being taught.

Although this dissertation is extremely well thought out and contains many useful ideas, its basic hypothesis, that music could be better understood if it were taught through its basic elements, was rejected. The experimental classes which were taught the dimensions of music were not significantly superior in musical understanding to the control classes, which were taught musical understanding as a whole by listening to records.

Hypothetically, this experiment should have produced different results; music should be understood better if it is taught through its dimensions. A reason for its failure could be that the musical steps to musical understanding are not necessarily related to the actual cognitive steps needed by the child to understand music. The dimensions of music were thought out and codified by adults, not children. Perhaps imposing these standards on a young mind, even though it may understand them, does not fit the cognitive structure of that mind. Perhaps certain essential cognitive steps to a musical understanding were skipped.

Another study in this area is Reeves' experiment on comparing two methods of teaching elementary instrumental classes, one patterned after Gestalt theories, the other patterned after associationist theories. The first group, those instructed in "whole to part" methods, learned first how to play by ear and rote, then gradually learned to read music. The second group, those instructed in "part to whole" methods learned how to read notes and rhythms first and gradually built melodies from these notes and rhythms. The final results are very interesting; the two methods balanced one another. The Gestalt group was slightly superior in musical interpretation, and the associationist group was slightly superior in sight-reading, but there were no significant differences in the averages of both groups. This dissertation is significant in that there was an attempt to settle the long standing argument over what approach is a more efficient way of teaching music. Reeves found that both methods produced almost equal results.

These two dissertations have given music education valuable information about the application of learning theories to music education. Although nothing spectacular can be said about new discoveries in the field, each proves that structured learning based on certain principles of learning theories can be applied as successfully as other methods which have been "tried and proven" in music education. The question arises, can a learning structure based on learning psychology ever improve upon preexisting methods of teaching music? This paper will try a somewhat different approach in solving this question. Instead of trying to apply principles of learning psychology to general levels of music, like performing and understanding, an attempt will be made to relate specific types of learning to specific tasks in music education. Then the specific tasks which are necessary to learn a single dimension of music; i.e., rhythm, will be structured into a learning hierarchy. From this learning hierarchy will be derived a learning sequence from which the student will learn the ability to read and perform musical rhythms.

The first section of the paper is a discussion of several types of learning thought important in learning to read and perform music at an elementary level. Signal learning is also discussed, although it is not directly related to the reading and performing of music, because of its possible influence on pre-school children. The main emphasis of this section is to classify specific musical tasks as to the type of learning required to incorporate them in a cognitive structure.

SIGNAL LEARNING

The first type of learning that Gagne' recognizes is signal learning. His definition states:

> "The individual learns to make a general diffuse response to a signal."

In order for this type of learning to occur, there must first be an unconditioned stimulus which produces an unconditioned response. Gagne[5] says that within the learner there must be natural reflex, typically a reflexive emotional response such as startle, fear, anger, or pleasure. Then a signal must be presented with the unconditioned stimulus. After a learning period where both stimuli are repeated simultaneously or in close proximity, the unconditioned response is elicited by the conditioned stimulus alone and thus becomes a conditioned response. The conditioned response is different from the unconditioned response because it is elicited by the signal and not directly from the unconditioned stimulus. Thus when Pavlov's dogs salivated to the buzzer instead of the food, they exhibited a conditioned response.

There are examples of signal learning in everyday life of humans.[6] The conditioned responses are of two basic types: those initiated from fear or some other form of negative affect and those initiated from pleasure or some other form of positive affect. The first type is exemplified by the fear of young children which causes them to avoid certain places or things because of pairing them with an unconditioned stimulus such as a loud noise. The second type is represented by the pleasure response of a young child to a teddy bear or a blanket and at a later stage of the individual's development, to a particular scene or melody. The paradigm[7] for this type of learning is represented as follows:

S——————————R

(Signal)

> "S" is the unconditioned stimulus; the signal (or the conditioned stimulus) is what becomes associated with the response changing it from an unconditioned response to a conditioned response.

Signal learning in music is observed early in a child's life. It is important because it may effect the child's general attitude toward music before he reaches school age. Music as a pure stimulus cannot produce a pain response unless it is at such an intensity level that it produces discomfort or actual pain in the child's ear; therefore, the sound of music itself is unlikely to cause negative forms of signal learning. This is discussed briefly below. Much of an infant's contact with music is through the mother's lullaby while she cradles him in her arms or her nursery rhymes while she plays with him. The music becomes associated with the pleasure of a happy or relaxing time. Soon many mothers find that they can leave a radio or record player in the child's room and go about household chores because the music "keeps him company." Signal learning has taught the child to exhibit the pleasure response to music. The following would represent what has occured:

Maternal Attention Pleasure Response
S——————R
(Music)
Music————Pleasure Response

It seems safe to assume that this conditioned response will, when the child is venturing, motivate him to seek sources of music other than his mother's voice. These sources are the stereo, the radio, the television, or perhaps a musical instrument such as a piano. Naturally because of the cost of possible danger of these sources, the child will be reprimanded for playing with them. If the child's interest is redirected with substitute objects such as his own toy instruments there is no apparent harm, but if the child is continually punished for playing with the sources or falls or receives an electric shock while playing with them, another type of signal learning might take place. The unconditioned stimulus' of a fall, shock, or spanking which produces an unconditioned response such as fear or crying might be paired with the music stimuli, especially if the sole purpose of the child's investigation of the source was to find where the music originated. The following diagram would represent what had occured:

Pain or Fear Stimulus Pain or Fear Response
S——————R
(Music)
Music————Pain or Fear Response

There is no empirical data to support what has just been stated (just as dogs were never known to come running when they heard the rattle of their food plate until Pavlov proved it in his laboratory). However; music educators have always been aware of a small percentage of children of primary school age who refuse to sing or participate in musical activities. Some of these children are even afraid to touch a piano or other musical instrument; in a way they seem actually afraid of musical sound. Perhaps signal learning as discussed above has effected the general attitude of these children toward music.

STIMULUS-RESPONSE LEARNING

The second type of learning Gagne' discusses is stimulus-response learning. His definition states:

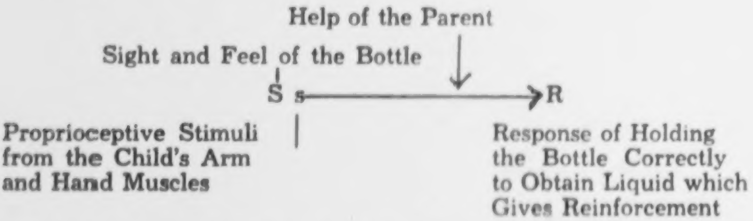
> "The learner acquires a precise response to a connection (Thorndike, 1898) or a discriminated operant (Skinner, 1938) sometimes called an instrumental response (Kimble, 1961)

Basically this type of learning constitutes associating a particular response to a particular stimulus. Usually it takes a period of time to associate the correct response to the correct stimulus during which the individual's behavior is said to be shaped. A set of stimuli, both external and internal, must be connected to a correct response through a "successive approximation" or a "trial by error" procedure depending upon the task. The learning becomes a matter of discrimination of correct and incorrect stimulation; of the set of stimuli which produces a reward and the set of stimuli which does not. The following paradigm is used to represent this form of learning.''

$$S \quad s \longrightarrow R$$

> The large "S" represents the external stimuli. The small "s" indicates the internal stimuli arising from kinesthesis and the arrow is used to imply the discriminating nature of the process (in contrast to signal learning) and the "R" is the proper response.

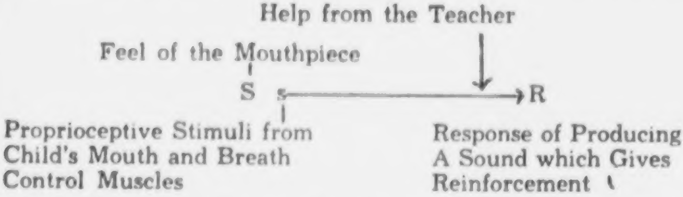
This type of learning is distinguishable from signal learning by the differences in the character of the responses. Whereas signal learning requires responses of a more generalized emotional nature, S-R learning requires responses of a fairly precise, differentiated nature, usually a specific motor task. This is best exemplified by the model Gagne'' uses in his book to demonstrate this type of learning. At first an infant does not know how to hold his bottle to obtain its contents. The parents must hold the bottle to assure proper feeding; however, the infant will grasp at it, quite unsystematically. Soon the parent begins to release his hold on the bottle so that the child will have to exert greater, more directed pressure to hold the bottle in place. After many trials and much help from the parent, the infant soon learns to hold the bottle at the proper angle for feeding; thus he has learned the correct response and the stimulus response connection has become established. The reward of the liquid is very important because it serves as a reinforcement of the proper response which strengthens its bond with the stimulus. The following model will show what has taken place:


Help of the Parent
Sight and Feel of the Bottle
S
s
R
Proprioceptive Stimuli from the Child's Arm and Hand Muscles
Response of Holding the Bottle Correctly to Obtain Liquid which Gives Reinforcement

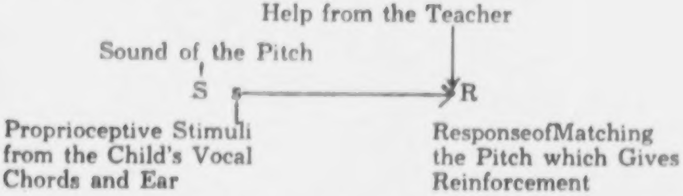
Much of the early learning which occurs through S——R bonds is fairly precise motor learning.'' This helps to distinguish between signal learning and $S \longrightarrow R$ learning in music education. Whereas signal learning seems to effect an individual's general attitudes

towards music, S→R learning seems to be found in the learning of basic motor skills needed to sing or play an instrument. The following situations will show examples of S→R learning in music.

S→R learning is seen in the beginning instrumentalist as he attempts to play the first note on his instrument. Although verbal cues may be used to position the instrument in the proper playing position, the actual muscle control needed to vibrate the lips in a cup-shaped mouthpiece or to cause a double or single reed to vibrate is clearly a case of the S→R type of learning. At first the child tries quite unsuccessfully to produce the tone. Then through the process of successive approximation and with help from the teacher, the student gradually learns to produce the tone which serves as the reinforcement of the proper response. A set of stimuli, including the sound and feel of the instrument as well as the proprioceptive stimuli from the child's mouth and breath control muscles becomes connected with a correct response of producing the desired sound. This example fits the S—R paradigm very well:


Help from the Teacher
Feel of the Mouthpiece
S
s
R
Proprioceptive Stimuli from Child's Mouth and Breath Control Muscles
Response of Producing A Sound which Gives Reinforcement

Another example of S—R learning in music is found in teaching a young singer to match a musical pitch, especially when the child has had little or no previous experience in this area. At first the child will sing lower or higher with no apparent systematic approach to matching the pitch which he hears. Then through many attempts and with the help of his teacher, the child will learn to match the pitch which he hears, which provides a type of audio reinforcement.[13] Soon the child will match pitches almost immediately upon hearing them.[14] The following diagram will show this example related to the S→R paradigm:


Help from the Teacher
Sound of the Pitch
S
s
R
Proprioceptive Stimuli from the Child's Vocal Chords and Ear
ResponseofMatching the Pitch which Gives Reinforcement

The preceding situations are examples of S→R learning in music. When the conditions of this type of learning are not thoroughly understood, much of the teaching benefits which can be derived from using this method of learning is over-looked, as in the instruction of rhythm which will be discussed later in this paper. As

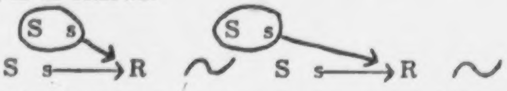
Gagne" states, this type of learning is a pre-requisite for higher forms of learning. It also seems safe to assume that a learning situation which uses S→R learning and gradually proceeded into higher types of learning would be the most efficient procedure of instruction.

CHAINING

Another simple and widely occuring type of learning which Gagne" discusses is chaining. His definition states:

> "What is acquired is a chain of two or more S→R connections. The conditions for such learning have been described by Skinner (1938) and others, notably Gilbert (1962)"

Basically, an individual relates two or more S→R connections to learn a more complicated task. What is important is that as the individual acquires chains, each S→R connection must be previously learned before the chain can be completed. In order to assure the proper order of S→R connections, verbal cues are often used, but later abandoned when the chain is firmly established. Reinforcement is received partially with the completion of each S→R connection and primarily with the completion of the terminal link, for if this final reinforcement is omitted, extinction of the final link causes the whole chain to disappear. The paradigm for chaining is as follows:"

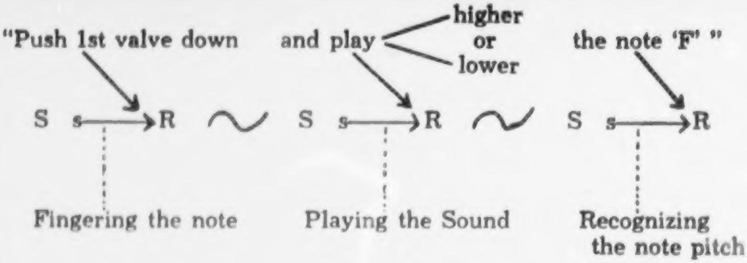


; and so on

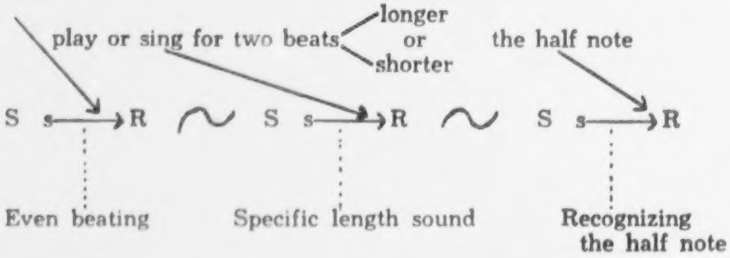
The circled "S s" is to represent verbal cues.

There are many examples of simple chaining which occur in the development of an individual." Gagne" also discusses verbal association which he classifies as a separate type of learning, but points out that it might be classified as a "sub-variety of chaining dealing with words. It seems as though chain learning has a very broad field of application. It can be used to teach a child to use a key to open a door or to teach an individual words in a foreign language.

Musical development in a child also incorporates learning by chaining. As the elementary instrumentalist progresses to the fundamental skills for reading music, it becomes necessary to recognize symbolic (printed) representations of note pitches. The S→R connections of playing a note on an instrument must be associated with the S→R connection of recognizing and naming the note by reading the music. The teacher supplies verbal cues to aid in prompting the particular S→R connection necessary in the chain, and these are abandoned after the chain is firmly established. The final reinforcement comes from the child knowing that he has played that particular note. This example would fit the chaining paradigm as follows:


"Push 1st valve down
and play
higher
or
lower
the note 'F' "
S s→R
S s→R
S s→R
Fingering the note
Playing the Sound
Recognizing the note pitch

Another type of chaining found in music education is learning to recognize the length which a note is to be played or sung. First the S→R connection of producing an even beat must be associated with the S→R connections necessary to produce the length of the note value being learned. Then the S→R connection needed to learn the visual stimulus of the particular note must be associated with the actual performance of the note. The teacher, as in the previous example, supplies verbal cues and the reinforcement comes from the child knowing that he has performed the note of the proper length. This example would be represented as follows: 'Establish a pulse, and


play or sing for two beats
longer
or
shorter
the half note
S s→R
S s→R
S s→R
Even beating
Specific length sound
Recognizing the half note

As is seen in the previous examples, this type of learning in beginning music education requires fairly complex S→R learnng. In a sense, these basic S→R connections cannot be considered pure types of S→R learning, for just as in Gagne's[46] example on adult speech patterns, the external and internal stimuli ncorporate the knowledge of other types of skills. For example, in order for a child to acquire an S s→R that permits him to sound a note for two beats, discrimination must take place of both aspects of the stimulation. The former is provided by discriminating the exact length of the sound from other similar, but incorrect engths. A half note must be two full beats, and not one and a half or two and a half. The latter requires that the child imitate the proper length of the note; i.e., practice playing or singing it, and thus discriminate the "feel" of the proper length of a half note from that of other incorrect lengths. Several repetitions may be required, involving differential reinforcement, in order for the exact length of the note to be properly "shaped."

Unless care is taken to assure that each of the $S \longrightarrow R$ connections is firmly established in the child, basic musical tasks, like playing or singing a written note at the proper pitch or the proper time value, will be difficult for the child to learn. Any structured course should include adequate time for these basic types of learning to occur, but as pointed out by a recent survey of elementary heterogeneous band methods,[11] many modern instructional books either assume that the child has already made the necessary connections or spend very little time in establishing these necessary connections. Evidently, as can be assumed from the instructional material, children in the fourth or fifth grade are supposed to have already acquired the skills necessary to learn to read basic rhythms and notes; however, this is a point of contention. The assumption that beginning instrumentalists do not have the necessary cognitive structure to learn these basic elements of music will be examined in the second half of this paper. An orderly learning sequence of basic types of learning will be constructed according to the basic skills necessary to acquire the ability to read rhythms. The emphasis will not be on learning to read music, but on learning the cognitive structures necessary to understand and perform written *musical rhythms,* which are themselves only one element in reading music.

VERBAL ASSOCIATION

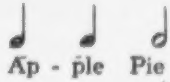
Another type of learning, which already has been discussed as a form of chaining, is verbal association. Gagne's[12] definition reads:

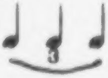
> "Verbal association is the learning of chains that are verbal. Basically, the conditions resemble those for other (motor) chains. However, the presence of language in the human being makes this a special type because internal links may be selected from the individual's previously learned repertoire of language."

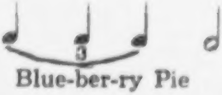
There are some aspects of this type of learning which occur in music education. The "internal links" selected from previous knowledge of words may be used to help relate the external stimulus (in this case, music) to the response of remembering the music. The following examples will help illustrate this.

In the medieval church, words were added to tropes (free flowing melodies originally sung on one syllable) in order that the singers might remember the melody better.[13] These words served the function of an internal linking or cueing device between the written music and singing of the music, for as a rule choir members at this time did not know how to read music (nor do they now).

The use of previously learned words as an internal link can also help children learn specific rhythmic patterns. (Orff[14] uses similar word patterns to teach rhythmic patterns.) Words like "apple pie" can be used to link with its proper rhythmic response,



or "blueberry pie" can be used to link  with its proper rhythmic response,



Verbal links such as this serve as a mediating capacity in the complicated task of translating written rhythm into audio rhythm, but there are limitations in using this type of learning to teach rhythm.

The limitations exist in the fact that what is learned is a response to an isolated rhythm. There are so many different rhythmic patterns in music that it would be impossible to learn them all in this manner. An analogy would be trying to learn a foreign language by memorizing all of the sentences and phrases of that language. Learning the individual note values in music is needed to read and perform rhythms just as learning the individual words in a foreign language is needed to read and speak that language.

MULTIPLE DISCRIMINATION

A more difficult type of learning that Gagne" discusses is multiple discrimination. His definition reads:

> "The individual learns to make 'n' different identifying responses to as many different stimuli, which may resemble each other in physical appearances to a greater or lesser degree. Although the learning of each S⟶R connection is a simple type two (S⟶R) occurance, the connections tend to interfere with each other's retention."

Basically, multiple discrimination involves remembering what is previously learned when new learning might interfere with the old. A good example of this type of learning is explained by Gagne." Although new cars may look quite alike to an adult, most teen-age boys can recognize and name each new model and type of most American cars soon after they appear in the showroom. Each type of car serves as a stimulus which must be discriminated from all other cars. Each identifying connection learned is a chain. These chains consist of S⟶R connections of the different physical features of that particular car such as grill work, trim or hood shape. The individual must first acquire a distinctive set of S s⟶Rs that differentiates the stimuli and sets off chains leading to the response that are the model names.

This type of learning has an important role in music education. Whereas learning the fundamentals of producing a musical sound and recognizing a note value or pitch name requires primarily $S \longrightarrow R$ and chain learning, the performing of a musical phrase or pattern requires multiple discrimination learning. The individual notes serve as a stimulus which must be discriminated from all other notes. The pitch and rhythm identifying connections are chains. These chains consist of $S \longrightarrow R$ connections of the features necessary to perform that note (proper time values, beating, etc.). The individual must first acquire a distinctive set of $S\ s \longrightarrow Rs$ that differentiate the stimuli and set off the chains leading to the responses which are the performance of the various notes and rhythms in a musical phrase or pattern.

SUMMARY

The preceding analysis of several basic types of learning, as set forth by Gagne, seem to indicate that three types are primarily needed to learn basic music reading: stimulus-response learning, chaining, and multiple-discrimination. Although there is no specific point where one type ends and the other starts, each more complicated type of learning needs the lesser complicated type of learning as a prerequisite. This writer believes that before a child can read a melody, he must learn to perform the pattern or phrases of the melody (multiple discrimination) by knowing how to respond to the individual notes in the phrases or pattern (chaining), which is dependent upon understanding the basic elements of each note ($S \longrightarrow R$). Although other types of basic learning (signal learning and verbal association) can be related to music education, they do not significantly effect the learning hierarchy necessary for basic music reading.

EXPERIMENTAL AND TRADITIONAL METHODS FOR TEACHING RHYTHM

The second part of this paper tries to find a practical application of the preceding theory and to test this approach against a popular conventional method. The musicl element *rhythm* was chosen because it appears to be the easiest musical task to teach and yet is one of the most difficult for the child to master.

THE EXPERIMENTAL METHOD

For a child to become an accomplished music reader, he must have the ability to read written rhythms. It is believed that this ability is acquired through three basic types of learning which exist in a hierarchy structure. Specific tasks which lead to an understanding of rhythm must be classified in their proper learning category. By emphasizing the development of each of these tasks it is felt that an orderly learning sequence can be constructed which will lead to an efficient way of learning rhythm. The learning ıcture as based on the specific types of learning could be diamed as follows:

Phase Three—Multiple discrimination learning
  Task: To read written rhythmic phrases

Phase Two—Chain learning
  Task: To recognize individual written note values

Phase One—Stimulus-response learning
  Task: To play longer or shorter notes
  Task: To learn to beat

ASE ONE

First, an important basic element in rhythm, beating, must be ʒht. Usually the child has already acquired the ability to feel even pulse. This is learned very early in the child's life, and it vident when he claps his hands to a nursery rhythm or steps in e to music. What must be taught by S——>R learning is the ity to respond to a representation of even beats (External nuli) which will be called "beat signs." Thus, the first response hild must learn is to read "beat signs." (Hindemith[17] uses a very ilar approach in teaching rhythm; however, the application is y abbreviated, consisting of only one exercise.) The child learns say "one" and tap his foot for the number of beats represented the blackboard.

S | | | | | | | | | | | |

R Says "one" and taps foot 12 times

After this ability has been learned, the child must learn to y long notes or short notes on his instrument represented by ɡ or short horizonal lines on the blackboard.

S———————— S —— —— —— ——

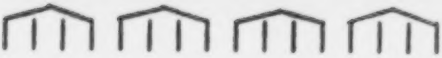
or

R Long note R Four short notes

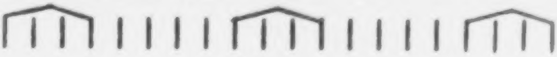
ASE TWO

After the ability to read beats and different unmetered notes accomplished, the notes must be related to the beats. This reres the first type of chain learning used. First, the child is tructed to play a long note over a certain amount of beats while ping those beats.

en the length of the note is shortened to include a specific number beats and groupings of beats are made.

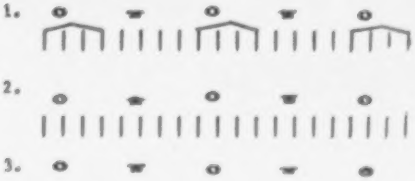


This process is repeated for other groups of 1, 2, and 3 beats per note, after which these groupings are interspersed with beats which do not receive any note length. The student is instructed to tap but not to play during these beats.



The process is continued until the child can produce the necessary note or rest length for each grouping. At no time are these groupings combined in one exercise. This would require multiple discrimination learning.

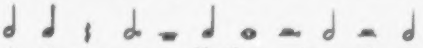
Now a new stimulus is added to the chain; i.e., the written symbols for the various length notes and rests. These are introduced along with the note length groupings and beats, first, then later, by omitting the other two, are made into the initial stimuli which set off the chain. The procedure would be instructed in this sequence.



This process is continued until the student can recognize four note and rest values (♩, 𝅗𝅥, 𝅗𝅥., 𝅝, 𝄽, 𝄼, 𝄼, 𝄻) by playing or resting the proper number of beats for a written line of similar notes and rest values.

PHASE THREE

After the basic rhythmic values are firmly established in the child, they must be combined into rhythmic lines which use a variety of the different notes and rests. Before the child can acquire this ability, he must know how to discriminate between similar stimuli in rapid succession; e.g., a rhythmic line like:



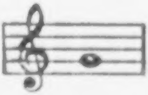
requires discrimination among all the note and rest values which are presented in this example. As the child reads this line, he must classify each symbol so that he may give it the proper number of beats. Even though the child knows all of the time values of the written symbols, when presented in such a spontaneous situation, these might tend to interfere with one another. If this is the case, the child must learn to look for the distinctive marking of that written symbol which aids him in making a rapid response; e.g., the

distinctive marking of 𝅗𝅥. which differentiates it from 𝅗𝅥 is the dot. As an added aid, the whole rhythm may be translated back into the beat group and basic beats for better understanding.

Many different written rhythmic patterns are used to continue this process. What is eventually learned is the ability to read written rhythmic phrases which consist of a variety of notes and rests in a quick, reliable manner.

CONVENTIONAL METHOD

The method which the preceding learning structure will be compared to is a very popular mode of elementary instrumental instruction used quite extensively in many schools. This method includes introducing rhythm directly from the notes printed on a five line staff. The following teaching procedure is representative of this method. The whole note is introduced on the five line staff.



It is described as a circle which is held for four beats. Then the teacher plays the note and has the students count to four while he plays. The students are then instructed to repeat the note lengths. After the students learn to respond to these notes, they are combined with their respective rests into rhythmic exercises of one pitch, written on the five line staff and in a meter with bar lines. The bar lines are explained as the even division of the beats in a piece to which an order of counts are applied. These counts are added when necessary as an aid for reading the rhythm.

In this method, the written symbols for rhythm are immediately used as a stimulus and the response is producing the proper length note or rest. Although this process seems to work after a number of trials, it is felt that some of the cognitive steps; e.g., learning to beat, and playing different length notes, are not firmly established and that they suffer interference from other stimuli; e.g., the staff and barlines. These phenomena become evident and therefore, objectively measurable, when the child tries to read rhythmic patterns of varying length notes and rests.

THE EXPERIMENT

The two previous methods of teaching were introduced to two groups of fifth grade students of the Maplewood-Richmond Heights School District. These children were beginning participants in the elementary instrumental music program and were studying brass instruments. Another group of private piano students were added to the first two groups to check possible intervening variables which might have effected the comparison of the first two groups.

THE EXPERIMENTAL GROUP

This group consisted of six fifth grade male students in the Sutton Elementary School. The average IQ in the group was 97 with a 15 point range, and two in the group had had previous instruction on instruments for less than three months. Four students were instructed on trumpets, and two were instructed on trombones. All six met as a group, and this group received thirty minute lessons three times a week on Monday, Wednesday, and Friday. They were not allowed to take their instruments home to practice. The course of instruction which includes basic aspects of the previously outlined approach to rhythm was pre-designed by the author and the music supervisor of the Maplewood-Richmond Heights School District in an unwritten pilot project done in the spring of 1968. Approximately five to seven minutes of each lesson was spent in learning the structured rhythmic approach. The teaching was done primarily by the author with occasional visits from the supervisor.

THE CONTROL GROUP

This group consisted of four fifth grade students in the East Richmond Elementary School. The average IQ in the group was 106 with a range of ten points and two in this group had had previous instruction on instruments, one for three months, the other for two years. The two female students were instructed on F horns and the two male subjects were instructed on a trumpet and a trombone. All the children were given one thirty minute lesson per week on Wednesday and instructed to take their instruments home to practice thirty minutes each day. The two F horn players were given individual lessons after meeting together for the first two lessons. All of these children were taught rhythm using a conventional method which has been previously outlined. Approximately ten minutes were spent on this approach every lesson. The teaching was done by the author with occasional visits from the music supervisor.

SECOND EXPERIMENTAL GROUP

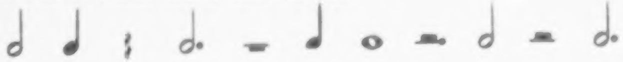
Due primarily to the scheduling differences of the first two groups, a third group was formed which consisted of private piano students. The amount of instructional time might have been an intervening variable in the comparison of the first two groups, so the time of the lesson of this group was the same as the control group, thirty minutes a week. This group was also instructed to practice the same amount of time as the control group, thirty minutes a day. The children in this group were two fourth grade and two fifth grade students selected because they began lessons at approximately the same time as the other groups. There was one male and one female from both the fourth and the fifth grades and their IQ are not known. None of these students had had any previous instruction on instruments. The same approach to rhythm at was used in the first experimental group was used to teach ythm to these students. The author did all of the teaching of this oup, and each student was instructed individually in a private sson.

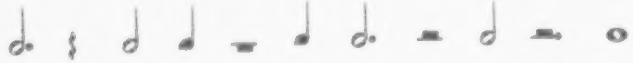
THER DATA

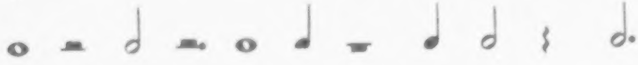
The first experimental group and the control group were begun ring the third week in February, 1969, and the second experiental group was begun at different times but within two weeks of e other groups. Each group received a total of nine weeks of ssons after which a test of sight-reading a rhythm was given to ch subject. No student missed more than one lesson. The absences lanced out in each group with the first experimental group havg slightly more absences than the other two groups. All students emed to enjoy their music lessons.

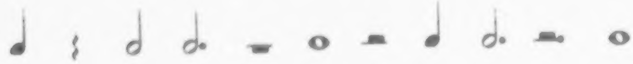
VALUATION OF THE GROUP

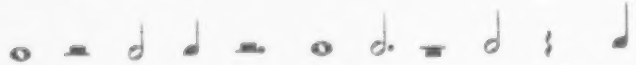
The test consisted of a rhythmic line of notes which included at ast one of all the basic note and rest symbols which were learned. x different versions of the test were needed to assure that the udents in the first experimental group which met as a class could t learn the rhythm by hearing another student play the test. The x versions of the test were as follows:

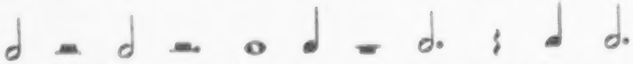
1.


2.


3.


4.


5.


6.


Each version was copied on a separate paper and was adinistered by the author without the other students (of those in e same class) being able to see the test.

The test was measured by the number of verbal cues and the umber of repetitions needed by each student to play the rhythmic ne correctly. In the class situation, verbal cues consisted of pointg to the improperly played note or rest and saying, "This should ave received 'n' (the correct number) beats." The score was kept y the author; the following page contains the results of the gradg.

RESULTS

Group	Subjects	No. of Cues	No. of Repetitions
First Experimental	1	1	1
	2	0	0
	3	3	1
	4	1	2
	5	0	1
	6	1	2
	Total	6	7
	Average	1	1.16
Second Experimental	1	1	1
	2	0	0
	3	2	1
	4	1	1
	Total	4	3
	Average	1	0.75
Control Group	1	0	0
	2	3	3
	3	2	1
	4	1	4
	Total	6	8
	Average	1.5	2.

RESULTS AND CONCLUSIONS

As is seen by the figures in the results, both experimental groups out performed the control group in the ability to play correctly a written rhythm. The best performing group was the private piano students in the second experimental group. Each group had one perfect performance, but the worst performance existed in the control group.

There seems to be a relationship between the number of verbal cues and the number of repetitions that may have some significance on how well the child has learned the elements of rhythm. Subject number three in the first experimental group corrected three mistakes in only one repetition, but subject number four in the control group took four repetitions to correct only one mistake. If there were more subjects in each group, perhaps more could be infered by this discrepancy.

The data of this experiment suggest no reason why the private piano students performed better than the other two groups. Perhaps the piano students could concentrate more on playing the correct rhythm because it is somewhat easier to press a piano key than t is to play a brass instrument.

FINAL CONCLUSION

The purpose of this experiment was to test a structured learnng sequence against a popular conventional method for teaching rhythm. Because of the small number of subjects in the experiment, he validity of the results may be questionable. However, the basic hypothesis, that a learning structure based on learning theories as et forth by Gagne, seems, at this time, to be workable and points to he need for more sophisticated experimentation in this area.

FOOTNOTES

1. Gagne, Robert M. *The Conditions of Learning*. New York: Holt, Rinehart and Winston, Inc., 1965, Chapter Seven.

2. Neidlinger, Robert Joseph, "A Study in Teaching Musical Style and Form to Elementary School Children Through the Pereption of Musical Dimensions." Unpublished Doctoral Dissertation, Department of Music, Washington University, 1967.

3. Reeves, William N. "An Exploratory Study of Two Sets of Learning Theories of Guthrie and Wheeler as they Relate to the Development of Instrumental Musicianship." Unpublished Doctoral Dissertation, Department of Education, University of Southern Caliornia, 1954.

4. Gagne. Op. Cit. p. 58.

5. Ibid. p. 65.

6. Ibid. p. 82

7. Ibid. p. 63

8. A loud noise may also fall into this category; however, for he child to exhibit an unconditioned fear response, the noise must be instantaneous, extreme, and unsolicited. Because these characteristics are rarely found in music, the intensity level of the music must be above the pain threshold to produce the pain response. Since ordinary household audio equipment cannot produce this kind f intenisty, it seems unlikely that loud music by itself can be conidered as an unconditioned pain stimulus.

9. Gagne. Op. Cit. p. 58

10. Ibid. p. 73.

11. Ibid. pp. 72 and 73

12. Ibid. p. 37

13. Lundin, Robert W. *An Objective Psychology of Music* (Second Edition). New York: The Ronald Press Company, 1967. Chapter Two.

14. Some individuals have aural perception problems, one example f this is the interpretation of the same frequency as two different pitches. Naturally, an individual with this problem has trouble matching pitch.

15. Gagne, Op. cit. p. 60.

16. Ibid. p. 58.

17. Ibid. p. 89.

18. Ibid. pp. 39-42 and 87-97.

19. Ibid. p. 42.

20. Ibid. pp. 83 and 84. This example tells of adults learning to pronounce the German umlaut by approximating between the English oo and ee sounds.

21. Milak, John. "Recent Publications of Elementary Band Methods for Heterogeneous Groups of Instruments.'" Unpublished Term Paper, Department of Music, Washington University, (Gaylord Library), January, 1969.

22. Gagne. Op. cit. p. 58.

23. Ulrich, Homer, and Paul A. Pisk. *A History of Music and Musical Style*. New York: Harcourt, Brace and World, Inc. 1963, pp. 42-46.

24. Orff, Carl, and Gunild Keetman. *Music For Children*. New York: Associated Music Publishers, Inc., 1961.

25. Gagne. Op. cit. p. 58.

26. Ibid. p. 45.

27. Hindenmith, Paul. *Elementary Training for Musicians*. (Second Edition) New York: Associated Music Publishers, Inc., 1961.

BIBLIOGRAPHY

Gagne, Robert M. *The Conditions of Learning*. New York: Holt, Rinehart and Winston, Inc., 1965.

Hinddemith, Paul. *Elementary Training for Musicians*. (Second Edition) New York: Associated Music Publishers, Inc., 1949.

Lundin, Robert W. *An Objective Psychology of Music*. (Second Edition) New York: The Ronald Press Company, 1967.

Milak, John. "Recent Publications of Elementary Band Methods for Heterogeneous Groups of Instruments". Unpublished Term Paper. Department of Music, Washington University, (Gaylord Library), January, 1969.

Neidlinger, Robert Joseph. "A Study in Teaching Musical Style and Form to Elementary School Children Through the Perception of Musical Dimensions." Unpublished Doctoral Dissertation, Department of Music, Washington University, 1967.

Orff, Carl, and Gunild Keetman. *Music For Children*. New York: Associated Music Publishers, Inc., 1961.

Reeves, William N. "An Exploratory Study of Two Sets of Learning Theories of Guthrie and Wheeler as They relate to the Development of Instrumental Musicianship." Unpublished Doctoral Dissertation, Department of Education, University of Southern California, 1954.

Ulrich, Homer, and Paul A. Pisk. *A History of Music and Musical Style*. New York: Harcourt, Brace and World, Inc., 1963.

AN EXPERIMENT IN PROGRAMMING RUDIMENTS OF MUSIC FOR FIFTH GRADE STUDENTS COMPARED TO CONVENTIONAL INSTRUCTIONAL METHODS

by
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Purpose

The purpose of this study was to compare two methods, the programmed method[1] and the conventional method,[2] when teaching the rudiments of music to fifth grade students. The control group was taught the rudiments of music by means of the conventional method and the experimental group was taught the rudiments of music by means of the programmed method. The following two hypotheses were considered:

1) The experimental group which is taught the rudiments of music by means of the programmed method, will complete the material before the control group, which is taught the rudiments of music by means of the conventional method, if the same amount of material is presented to both groups.
2) The experimental group will have a higher mean score than the control group if identical tests are given to both groups on identical amounts of material.

The material taught the fifth grade students included the following selected areas of music rudiments: music notation, rhythm, clefs, note names, accidentals, key signatures, major scales, minor scales, and dynamic markings. The music rudiments coincide with the material found in most fifth grade elementary music text books currently being published. It was the purpose of the investigator to teach the students rudiments of music that would enable them to recognize most musical symbols which they might be expected to understand to participate in public school vocal music organizations until the time of their graduation from high school.

Details of the Project

There were two fifth grade classes involved in the study. The experimental group, which we shall refer to as group E, had a total of thirty students. The control group, which we shall refer to as group C, had twenty-five students. The two classes met in separate, non-adjacent rooms in the same school.

The investigator instructed both the experimental and the control group. Each class received instruction in music rudiments for thirty minutes on Tuesday and Thursday of each week for a nine-week period. Under normal conditions each fifth grade class received instruction from a music specialist once each week for thirty minutes. Therefore the students involved in the project received twice the amount of instruction time devoted to the study of music as compared to the amount of instruction time that would have normally been devoted to their musical training.

Administration

Identical pre-tests were given to both the control and the experimental groups. The pre-test was comprised of groups of questions, each group constructed to test the student's knowledge of a particular section of the program.

Students in the experimental group were exempt from completing a section of the program if they gave all correct answers to the group of pre-test questions that related specifically to that section. Due to previous musical achievement, all the students in the experimental group did not work on the same section of the program at the same time.

There are twelve sections in the program each lettered A through L. Of the thirty students in group E, twenty began with section A, five began with section B, two began with section C, two began with section D, and one began with section E. These beginning placements were a direct result of the pre-test given to all students involved in the study.

The results of the pre-test had a different meaning for the control group. Since the investigator instructed the control group by means of the conventional method it was impossible for every student to begin at his present level of musical achievement. However, the identical pre-test was used in order to see where the control group's level of musical achievement clustered. The group of pre-test questions answered correctly by the largest number of students in the control group indicated to the investigator which section of music rudiments should be taught first.

Of the twenty-five students in group C, two could have begun by receiving instruction in section C, eight could have begun by receiving instruction in section B, and fifteen could have begun by receiving instruction in section A. Since the investigator instructed the control group by means of the conventional method, group C's musical instruction commenced with the same material found in section A of the program, the section where most of group C clustered on the pre-test.

One day each week the students were asked to identify various symbols and answer questions about music found in their music book, *Exploring Music* 5.[3] The purpose of doing this was to help the student relate knowledge he was gaining about the rudiments of music to the music with which he came in contact. This was carried out easily in the control group since every child studied the same material at the same time; however, in the experimental group it was necessary for the investigator to know the section of the program each student had completed in order that a student would be asked questions only on the material with which he had become acquainted.

The tests on each section consisted of questions which were keyed to certain frames in a section of the program.[4] When a student in group E completed a section of the program, he was given a test on that section. If all the answers on the test were not correct, he was required to take the test again. The test was given for the second time after the student had reviewed the frames of the section which were keyed to the question he had answered incorrectly. (Only scores tabulated the first time a test was given were used for purposes of comparison.) Only after a student had completed all questions on a test correctly was he allowed to begin the next section of the program.

After the investigator taught the control group the material contained in a section of the program, the control group was given the same test that the experimental group was given for the same section. Naturally the keyed questions were of no benefit to the control group nor was the control group required to repeat the test if errors were made. However, if more than one half the students in the control group answered a test question incorrectly additional time was spent reviewing the material related to the question.

The students in group E required from five hours fifteen minutest to eight hours fifteen minutes to complete the program. The children in group C all required seven hours fifteen minutes to complete the identical amount of material.

These facts neither prove nor disprove hypothesis one which stated that the experimental group which was taught the rudiments of music by means of the programmed method, would complete the material before the control group, which was taught the rudiments of music by means of the conventional method, if the same amount of material was presented to both groups. However this suggests that it was possible for the students in group E who were rapid learners to progress more quickly than potential rapid learners in group C. It also may indicate that the slow learner in group E could work at his own pace and was not forced to conform to the pace of the group, as were slow learners in group C.

Two weeks after the completion of the last section test each student in both the control and the experimental groups was given a post-test, very similar to the pre-test, to measure the amount of musical knowledge that he had retained. For results of these scores consult the statistical comparisons presented in this paper.

Preparation

A great amount of time is needed to prepare the material for a course which is programmed. For each section approximately three hours were required to prepare the stencils so that the material could be reproduced in quantity. The procedure for preparing the stencils involved planning all of the frames in each section, as well as arranging each page with the irregular number sequence so one would know how many pages were needed for each section, and the order of the frames and their answers. A dummy then was set up, so the stencils could be typed. Additional time was required to process the stencils and to staple the pages into a section. Analysing the material presented in the various elementary music text books also added to the time element.

Correction

Correction of tests and the programmed sections was simplified by construction of a mask for each page. The mask was placed over the page to be corrected and the correct answers appeared in spaces in the mask. The use of a mask was made possible by constructing objective pre-tests, section tests, programmed sections, and post-tests, which had multiple choice answers. Since only one answer of the multiple choice questions could be correct, biased judgment on the part of the investigator was eliminated when scoring the various tests.

Materials

The selection of materials to be included in the program was made after a perusal of several programmed texts, and all currently published fifth grade music text books. Careful consideration was also given to the musical knowledge a person must possess to participate successfully in a musical organization in high school.

Statistical Comparisons

The scores of group C and group E were compared by computer computation on fifteen different test scores.[3] The comparative scores answer some of the questions regarding the reliability of the study. Significance is reported at the five percent level.[4] This level of significance was chosen since it is generally used as the means of reporting variance in studies of this nature.

The most important information needed to conduct a study in which teaching methods are compared is one of knowing whether the two groups being used for the comparison are homogeneous or heterogeneous with regard to previous knowledge of the material which is to be taught. A comparison of scores on the pre-test, which was administered to all students in each group, shows the mean for group C to be 55.384 while the pre-test mean for group E is 60.066. Although the means differ approximately five points, there is no significant difference in the amount of knowledge group C has about the rudiments of music as compared to the amount of knowledge group E has about the rudiments of music. (Refer to Fig. 3-1)

Fig. 3-1
Analysis of Variance

	Degrees of Freedom	Squares Sum of	Mean Square	F Test
Source of				
Variation	1	305.33600	305.33600	.98015221*
among groups	54	16822.024	311.51896	*
Total 55		17127.360		

*The F Test scores must be 4.04 or greater to indicate significant difference between two means. This is true for all F Test scores reported for this study.

The analysis of variance was also computed for the twelve tests given to test the students' knowledge of the material presented in each of the twelve sections. In most cases there was no significant diffrence between the test scores as compared to the method of instruction. However, in some instances there was significant difference in the group mean scores.

Fig. 3-2

Analyis of Variance

	Degrees of Freedom	Sum of Squares	Mean Square	F Test
Source of Variation	1	58.258100	58.258100	4.5715223
among groups	50	637.18490	12.743698	
Total	51	695.44300		

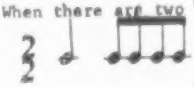
Figure 3-2 indicates that there was significant difference between the group scores on test D. The mean of 14.76 for group E. After reconsideration of section D of the program the investigator feels that if the semantics of the frames were changed the significant difference between the means of group test scores would probably be non-existant.

A frame of section D which reads:

> "An eighth note gets ¼ of one beat if there are two beats in one measure and the bottom number of the time signature is two"

should be changed to read:

When there are two beats in this measure



an eighth note (♪) gets ¼ of one beat."

All frames which are of this semantic difficulty should be changed in a similar manner.

The mean score for group C on test H was 9.68 as compared to a mean score of 8.93 for group E on the same test.There is significant difference between the means as seen in Fig. 3-3. The mean for group E might not be significantly lower if more review frames concerning the correct placement of stems on notes were included in section H of the program.

Fig. 3-3

Analysis of Variance

	Degrees of Freedom	Sum of Squares	Mean Square	F Test
Source of Variation	1	7.6024000	7.602400	5.3504828
among groups	53	75.306700	1.4208811	
Total	54	82.909100		

Significant difference also exists between the group means for test L. (Refer to Fig. 3-4). The mean score for group C was 11.65 as compared to group E's mean score of 10.30. A change which may result in a higher mean score for group E might be implemented by placing one extra frame in section L. This frame would show the relationship of the terms to one another. The frames presently exist as individual sources of information without any correlation of the material presented within the section.

Fig. 3-4
Analysis of Variance

	Degrees of Freedom	Sum of Squares	Mean Square	F Test
Source of Variation	1	21.870000	21.870000	8.1471478
among groups	48	128.85000	2.6843750	
Total	49	150.72000		

Although significant difference does exist between the group mean scores on three of the twelve section tests, when all twelve scores are totaled to form a composite score, there is no significant difference between the two group means.

After each student completed the study of rudiments of music, there was a two-week period when the student was not further exposed to the rudiments of music. At the conclusion of this two-week period a post-test was administered to determine the amount of knowledge the students had retained from their instruction. All the material presented in the previous nine-week period was included in the post-test. There was no significant difference between the group means on the post-test scores. (See Fig. 3-5) This indicates that the method of material presentation did not significantly effect the amount of knowledge retained.

Fig. 3-5
Analysis of Variance

	Degrees of Freedom	Sum of Squares	Mean Square	F Test
Source of Variation	1	22.520000	22.520000	.056513654
among groups	54	21518.340	398.48777	
Total	55	21540.860		

In the final analysis of the statistical data of this study the implications are that whether the conventional method of teaching is used or the programmed method is used in teaching rudiments of music, the results will not be significantly different in ninety-five percent of the cases of a purely random sample. Therefore, hypothesis two, "the experimental group will have a higher mean score than the control group if identical tests are given to both groups on identical amounts of material," is proven incorrect for ninety-five percent of the cases of a purely random sample.

Regardless of the method used in presenting material to be learned it is important to determine whether actual learning does occur. In this study learning did occur in both groups. (Refer to Fig. 3-6.) Group C responded correctly to forty-nine percent of the questions on the pre-test and had a correct response for seventy-seven percent of the questions on the post-test. Group E had a similar increase in the percentage of correct answers given. Therefore, it is concluded that learning did occur.

Fig. 3-6

	Pre-test mean Percentage*	Post-test mean Percentage*
Group C	49.4505	77.432
Group E	53.6309	78.333

*Mean percentage is the mean score for each group based on 100%.

Students' Reactions

This section will present facts concerning the study drawn from the answers students gave to questions posed by the investigator. At the end of the nine-week period all of the students involved in the study were requested to answer the questions. The students were told by the investigator that the information they would give by answering the questions would be very helpful to him. The students were instructed not to use their names but only their group identification; i.e., either group C or group E. Since the students knew what was expected of them and the importance of their comments, it is felt that in most cases the comments expressed are the true feelings of the students and are mixed with very few non-constructive feelings.

In order to present unbiased reporting of the answers given by the students, the following procedure was used: when an answer was difficult to interpret, when it was vague, or could be interpreted more than one way, the response was tabulated in the "no answer column." A total of fifty-four responses were given to questions one and two. Twenty-seven answers were given to questions three and four.

Question one: DO YOU LIKE TO STUDY ABOUT MUSIC? WHY? OR WHY NOT?

Fig. 4-1

	Group C %	Group E %
yes	56	85
no	37	15
no answer	7	—

Question two: SINCE YOU BEGAN HAVING SPECIAL CLASSES IN MUSIC HAVE YOUR IDEAS ABOUT MUSIC CHANGED? WHY? OR WHY NOT?

Fig. 4-2

	Group C %	Group E %
yes	48	85
no	22	3
no change	30	12

Those students who gave a positive answer to the question indicated that their attitudes had been changed toward the positive. Those students who gave a negative answer to the question indicated that they had developed adverse feelings toward music. In some cases these feelings were a result of the study; in other cases the adverse feelings were present before the study began. Those answers tabulated in the "no change" column indicate that the student's feelings were not changed since the beginning of the study.

Question three: DO YOU LIKE TO LEARN BY THE PROGRAMMED METHOD USING THE SECTIONS? WHY? OR WHY NOT?

Fig. 4-3A

	Group E %
yes	85
no	15

Of the positive answers, the following were listed as reasons why programming was liked.

Fig. 4-3B

	Group E %
easier learning	22
better retention	22
faster learning	15
more interesting	12

Question four: DID YOU LIKE TO SING A SONG AND THEN TALK ABOUT THE DIFFERENT FACTS YOU LEARNED IN THE PROGRAM? WHY? OR WHY NOT?

Fig. 4-4

	Group E %
yes	67
no	30
no answer	3

Since a small number of answers are involved, the percentages can in no way be termed conclusive. They do, however, present each group's reaction to some of the principles involved in a study of this nature.

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Variables

A problem which seems to be common in many experimental designs is the one of uncontrolled variables. When the design of an experiment is created it is difficult to foresee all variables which need to be controlled during the course of the experiment. This experiment or study is certainly no exception. Uncontrolled variables were present and probably effected the results to some degree. (See below)

Motivation

The motivation found in two groups could be found in any classroom situation. The scholastic grade in music that each student received at the end of the quarter was one factor which motivated the child to learn the rudiments of music. The other was intrinsic motivation which most music teachers create by emphasizing the added enjoyment an individual receives from music when he has more knowledge about music.

The experimental group through the use of the programmed method should have received additional motivation by means of immediate feedback. The immediacy of knowing whether the answer to a question is correct should motivate a student to learn because his confidence in himself is constantly increased. Whether this additional motivation in group E did, in fact, actually occur is not known, nor is it known to what degree it affected test performance.

Presentation

The control group recognized certain aspects of music rudiments not only by sight, as the experimental group did, but also by sound. This variable was present because the teacher demonstrations in the control group incorporated sound, whereas sound was not related to the rudiments of music in the experimental group. The variance in presentation could have caused discrepancy in the comparison of test scores for both groups. However, this discrepancy did not occur because the tests were constructed without the use of sound, allowing both groups to respond to questions which were impartial to either group.

Practice

As mentioned above students in group E were required to repeat a section test until they gave all correct responses to all the questions. This caused the students in group E to receive more practice answering questions on the test when compared to the amount of practice received by group C. This in no way influenced scores on the section tests. In group E only the student's first score was tabulated and used for comparison. Practice, however could have influenced the post-test scores in group E, since they did have more practice in being tested on the material than did the students in group C. The full effect of practice on post-test scores is not known.

As a counterbalance to the extra practice received by group E, group C received extensive drill on the material covered in a section. This drill was directed by the investigator immediately prior to administering a test to group C. Again the exact influence of this drill is not known but it probably had some effect on test and possibly post-test score results.

Preference for Music

The number of students in group E who liked to study about music was greater than the number of students in group C who liked to study about music. (Refer to Fig. 4-1) A favorable attitude toward a particular subject matter probably influences a student's performance on tests. It is not known to what degree this favorable atttiude influenced the data for group E, but it probably was an influencing factor. This is another variable that was difficult to control, due to previous exposure to music in the classroom.

Absence

In group E all data was available for every student. Programmed instruction made it possible for an absent student to begin at the same place he had stopped, whether it was two days or one week later. In group C, however, absence from class caused a student to miss an explanation of an entire section which he could not make up. Therefore, a complete list of data was not available for every student in group C as it was in group E. This probably effected the post-test performance for some students in group C, since they may not have been exposed to all of the material.

The exact effect of the uncontrolled variables is difficult to determine. However they may effect data enough so that given the same material and the same situation, but different uncontrolled variables, the statistical data would be different in *more* than five percent of the cases in a purely random sample.

Conclusion

This study would imply that programmed instruction is not a superior method of teaching the rudiments of music but that it is equally as effective as other present-day conventional methods. Indeed in this study learning did occur when the programmed as well as the conventional method of instruction was used.

In sum, hypothesis one which stated:

> "the experimental group which was taught the rudiments of music by means of the programmed method, would complete the material before the control group, which was taught the rudiments of music by means of the conventional method, if the same amount of material was presented to both groups"

was neither proven correct or incorrect. Some students in group E were able to complete the program before the students in group C were able to complete the same material presentd by the conventional method of teaching. In other cases, group E students did not complete the material before students in group C. Therefore, a positive statement can not be made that the method of instruction would enable a child to work at a quicker pace. The pace at which a student works is probably more closely linked to his personal study habits and intelligence than to the method of instruction.

Hypothesis two,

> "the experimental group will have a higher mean score than the control group if identical tests are given to both groups on identical amounts of material"

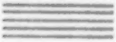
was not found to be true. Whether the conventional method of teaching is used or the programmed method is used in teaching rudiments of music, the results will not be significantly different in ninety-five percent of the cases of a purely random sample.

The programmed instruction does have the advantage of allowing each student to work at his present level of achievement, work at his own pace, and to respond to every question. Students who receive programmed instruction also have the added opportunity of review if it is needed or the option of not reviewing.

Certainly it would be difficult to teach the aesthetics of music by means of programmed instruction, but it does function as well as any other method when factual knowledge of music is being taught. Thus, I do not mean to suggest that programming is equally as effective to teach ALL phases of music, but that it is effective when used to teach facts about music.

FOOTNOTES

1. The programmed method consists of frames which give the student information, frames which require the student to respond to a question, and the means for a student to immediately find out if the answer he gave to a question was correct. For example:
    There are Italian abbreviations used (Answer found
    to indicate dynamics. pp (pianissimo) on next page)
    means very soft.
    Very soft is indicated by .... pp
    (ff, pp, mp)
2. The conventional method of teaching consists of a series of teacher demonstrations, class discussion, class exercises in the use of music rudiments, review, and testing.
3. Boardman, Eunice, and Landis, Beth, *Exploring Music* 5, Holt, Rinehart, and Winston, New York, 1966.
4. For example a keyed question would read as follows:



This is a .... staff ....
bar line ....
clef sign ....
(Frames 1, 3 & 4)

5. Computer computations were carried out with the support of the Washington University computing facilities through NSF grant G-22296.
6. This indicates that significant difference between means would occur in only five percent of the cases in a purely random sample.

Pre-test — Post-test

PRE-TEST Placement .... GROUP ....

NAME: .... SEX: M ....

AGE: Years .... Months .... F ....

How many years have you attended school in the Parkway District? ....

What instrument do you play? ....

What instrument do you play in the band or orchestra? ....

Have you had private music lessons? .... Yes .... No

What instrument? ....

How long? .... Years .... Months

THIS IS A PRE-TEST TO FIND OUT HOW MUCH YOU KNOW ABOUT MUSIC. IF YOU DO NOT KNOW THE ANSWER TO A QUESTION DO NOT MAKE ANY MARK FOR THAT QUESTION ON YOUR TEST SHEET. YOU ARE TAKING THIS TEST SO YOUR TEACHER CAN HELP YOU LEARN EASIER AND BETTER ABOUT MUSIC.

SAMPLE QUESTION: Place a check mark ( ) on the line following the correct answer.

A trombone is:	a musical note	....
	a musical instrument	....
	a musical riff	....

The correct answer is: a musical instrument

Copies of the actual program used by Mr. Wardenburg may be obtained by writing Mr. Wardenburg, Music Department, Washington University, St. Louis, Missouri.

A STUDY IN DEVELOPING AN ARTISTIC INTERPRETATION OF THE SONG

Chester Troy O'Bannon, D.M.A.

University of Missouri at Kansas City, 1967

Abstract

The writer has found in his experiences as a professional singer and teacher that many singers do not understand the true meaning of interpretation and particularly that they are not aware of the responsibility that goes with its application. It is the writer's contention that too often the singer, becoming involved with vocal techniques and mechanics of a given song, fails to study it in relation to the composer, poet, text and style. The result often times being, a superficial interpretation superimposed upon pure mechanics at the last minute before performance.

With the above problem in mind the writer, based on research and study, designed a study aid for use by a singer when preparing a song for performance. The aid was based on a chart and worksheet principle. The chart consisted of flip-over pages, containing various units of song study. The stages of study were designed to guide the singer's preparation in learning the mechanics of a song, fulfilling his responsibility to the work and blending in his personal creativity, thereby arriving at an artistic interpretation. Worksheets with lined blank spaces were placed underneath the chart. The student was to be required to fill out a sheet for every song studied. Such a method required the singer to do the research and analyzation himself rather than parroting the teacher as is so often the case. The information was thus available for future reference.

This "chart-sheet" study aid was applied to the learning of the materials which constituted the author's two doctoral recitals at the Conservatory of Music of the University of Missouri at Kansas City. The aid was then used by the writer in actual studio situations at the Pensacola Junior College, Pensacola, Florida where he is an Associate Professor of Voice. A paper was then written detailing the research and results of the laboratory developments.

Order No. 68-3574

BRASS INSTRUMENT KEY AND VALVE MECHANISMS MADE IN AMERICA BEFORE 1875

With Special Reference to the D. S. Pillsbury Collection in Greenfield Village, Dearborn, Michigan

Robert E. Eliason, D.M.A. 1968
University of Missouri at Kansas City

ABSTRACT

Although little has been written about the participation of American musical instrument makers in the development of keyed and valved brass instruments, their contribution was ambitious and creative, and produced a number of remarkable results. Several interesting facets of this participation were revealed by a detailed examination of more than 200 brass instruments marked by American makers, together with a search of United States patent records.

In America, the keyed bugle continued a development that was evidently cut short in Europe by the early appearance of good valved instruments. The high Eb keyed bugle with nine or more keys became the standard instrument in America before mid-century, and virtuoso playing on it flourished. By the 1850's the instrument was commonly made in this country with twelve keys. The additional five keys over the seven usually found on European instruments evidently gave the keyed bugle the greater range and facility demanded of it by American band soloists.

At least five original valve designs appeared in this country from 1825 to 1872 including what may have been the first rotary valve ever made. Another of these designs, a cylindrical rotary valve with interior windways in the shape of a flat oval, was produced in quantity by several American firms and continued in use from the 1850's until late in the century.

All early American-made valve instruments, including one dated 1825, were equipped with tuning slides on their valve tubes, a refinement not found on European instruments until at least two years later.

Vienna double piston valves may have been made in America as early as 1830, barely a year after the earliest known European example. Vienna rotary valves were made in this country beginning in the 1840's, but in a distinctly American version, lighter and simpler in construction.

America's most important contribution to valve design, the string action for rotary valves, was made at least by the late 1840's and found wide acceptance. Of all the American-made instruments examined for this study only one has the articulated crank and clockspring action almost universally applied to European rotary valves of this period.

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During the 1860's Americans first began to make a piston valve, copying the old *Berliner Pumpen* or Berlin valve. The Périnet piston valve was first introduced and manufactured here by Henry Distin who emigrated to Philadelphia from England in 1868. After 1875 the rotary valve gradually began to lose favor, and by 1900 piston valves of the Périnet type completely dominated American manufacture and usage.

The Pillsbury collection of brass instruments at the Henry Ford Museum, Dearborn, Michigan, contains examples of most of these instruments. This collection is described in a catalogue published by Chickering & Sons for their exhibition in 1902. However, it was found upon examination of the instruments that the catalogue entries contain many serious omissions and errors. An attempt to correct these inaccuracies is included.

Appendixes to this dissertation list the twenty collections examined, forty-seven American firms whose names appear on surviving instruments of the period, some errors in addition to those of the *Chickering Catalogue* found in published materials, and patents referred to.
Order No. 69-07227

A STUDY OF THE APPLICATION OF CREATIVITY IN THE TEACHING OF SECONDARY SCHOOL MUSIC

Elwood Hansel Brown, D.M.A.
University of Missouri at Kansas City, 1968

Abstract

The study is divided into two major sections. The first section, in general, is concerned with the general nature of creativity as it is known in the field of education today. Background is presented concerning thinking in the area of creativity today with some reference made to those personalities involved most prominently with the creative process in the theory and methodology of the current educative processes.

In defining creativity, an attempt is made to clarify the term in terms of music education and education in general to include the distinguishing of creativity in modern educational thinking as a process which is centered in the concept of problem-solving. As an elaboration is attempted of the implications of the process, it is related to basic concepts of music learning. Methodology is implied which can be implemented in the teaching of secondary school music from the standpoint of meaningful experiences and truly *music learning*.

As a part of the background for exploration of the general nature of creativity, an over-view is presented of the philosophical backgrounds and implications for creativity as expressed by those

philosophers and philosophies which most nearly approximate the theories and methodology of creativity as an educational process. An emphasis is placed upon the thinking of the pragmatic school which seems to be very much in accord with the principles and ideals of the creative process.

An over-view of the psychological principles involved in creativity and the practice of creativity as a method or process is presented along with pertinent theories and principles of learning creatively.

The second section of the study is concerned with relating the general presentation of creativity to music education. An attempt is made to indicate how creative methodology can be applied to the teaching of secondary school music. While the material presented relates somewhat to all areas of secondary school music, the writing is slanted toward the vocal-choral area with which the writer is most familiar. An attempt is made to relate principles of a creative philosophy to principles of music education philosophy; principles of a creative psychology to principles of music and music education psychology. Methods, procedures, and principles of creativity are presented which have significance for music education relating how these methods, procedures, and principles may be applied in a general sense to the teaching of and performing of secondary school music for improved *music learning* and more meaningful experiences.

The thesis implied is that music educators are not providing for a meaningful experience with music at the secondary level particularly in the performance area. This has been attempted to be corroborated through a discussion of findings of a questionnaire sent to various high schools throughout the United States to ascertain the expected status of current practices in secondary school music teaching. The questionnaire was also designed to ascertain whether music educators in high schools and colleges throughout the country were aware of the creative process and creative methodology as an avenue of approach for more meaningful teaching of music in the school. Through example and through alluding to implications, it is shown how the creative process can be implemented as a worthy teaching procedure for enriching the musical learnings in the secondary school music curriculum.

(Order No. 68-15,219)

A STUDY OF REHEARSAL TECHNIQUES FOR SYMPHONIC BAND

William Nolley Vereene, D.M.A., 1968
University of Missouri at Kansas City

Abstract

On the basis of a survey of the literature conducted by the author, it was concluded that rehearsal techniques for symphonic bands were not condified in one specific source. A basic list of

two-hundred-seventy-five rehearsal techniques was discovered from utilizing this survey and interviewing band directors, music teachers, and college professors.

A questionnaire, containing twenty-two multi-part questions found to be most pertinent for good rehearsal techniques of symphonic bands and designed to reflect the relative importance of each item for rehearsal techniques was evolved and mailed to one-hundred-seventy-five experienced and reputable band directors throughout the United States. From the eighty-two per cent return of the Questionnaire, grade-level categories of the respondees were formulated, i.e., Elementary, directors who were primarily concerned with teaching beginners; High School, directors who were concerned with teaching intermediate and advanced students; and College, directors who were responsible for teaching college students. A statistical analysis was made for each item according to grade-level category including an All-Level category.

Although each question was believed to be an important factor for rehearsal technique of symphonic bands by the respondees, there was some disagreement among grade-level categories as to the relative importance of some items. An In-depth Study of the results of the Questionnaire was made in order to define why differences of opinion existed. The In-depth Study was mailed to twenty select band directors throughout the United States; and, while there was only a fifty-two percent return, each grade-level was equally represented by the respondees. Each recipient was asked to submit reasons why he thought differences of opinion existed. A comparison of the In-depth Study and Questionnaire results was made in order to clarify the relative importance of each technique according to grade-level category.

The results of the research (1) collate and codify items believed to be most important to rehearsal techniques of symphonic bands, (2) furnish statistical analysis of each item by grade-level category, (3) isolate possible curricula content for educational method courses utilized in the teaching of future band directors, and (4) contain hueristic value for future research relative to specific items concerned with rehearsal techniques of symphonic bands.

FACTORS CONCERNING THE PRODUCTION OF THE MUSICAL IN THE HIGH SCHOOL

John Marcus Burnau, D.M.A.
University of Missouri at Kansas City, 1966

ABSTRACT

The production of a school "musical," a program incorporating the use of music, dialogue, and stagecraft, is an important part of the music curricula of many secondary schools in this country.

Music educators appear to entertain a variety of modes of thought concerning educational purposes and values that may be latent in the development of this facet of the curriculum of music instruction in the high school.

This study was brought about for the purpose of investigating possible musical, educational, cultural, and public relations benefits that may be provided high school students, patrons, and the school by the production of a "musical," and to determine current methods of production procedures in defined Missouri high schools. Questions considered to be important were: "What are possible contributions of the 'musical' to the total personal-educational development of the high school student?"; and, "What are possible benefits afforded the school and public by the production of a 'musical' which are important continuing aspects of the educational design of a democratic concept of public school educational instruction?"

The survey of the study comprised an investigation of methods and manners of "musical" production in eighty-six Missouri high schools. Incidences of production among the replying schools, the types of productions presented, manners and modes of presentation of "musicals," and judgments of the replying music directors concerning values of producing "musicals" were determined.

Materials that have been utilized with success by high school music directors in the categories of Broadway musical comedies, musical comedies written specifically for high school production, original music comedies, operettas, and operas were discussed and specific descriptions of a number of productions compiled. In addition, case studies of musical productions in two high schools are presented: one, a production in a school with an enrollment of less than four hundred students; the other, a production in a school in which the enrollment exceeded two thousand students.

Findings of the study indicated that fifty-eight per cent of the participating schools produced a "musical." Of the schools producing "musicals," forty-six per cent produced a musical comedy: twenty-four per cent produced an operetta; twenty per cent, a musical revue; six per cent, a folk opera; and four per cent, an opera. Methods of accompaniment of the "musicals" ranged from the use of one-piano accompaniments, two-piano accompaniments, piano-drums-double bass accompaniments, to full instrumentation of stage band or orchestra accompaniments. Rehearsal schedules varied from four to twelve weeks in length with the six and eight week schedules predominating. The evening rehearsal was more frequently utilized than morning, school-time, or afternoon rehearsals. The incidence of the use of dance routines in the productions was eighty-seven per cent. Co-operation of the art departments of the schools in the production of the "musicals" was forty-seven per cent; thirty-two per cent of the physical education departments of the schools producing "musicals" were involved in the production. Orchestra instruction was available in thirty-nine per cent of the schools represented in the survey.

Major conclusions and recommendations:

1. Music education students at the college level should be encouraged to enroll in courses of the elements of the "dance," and "theater," because of the many instances in which the high school music director is required to manage all of the facets of a music-dramatic production.

2. The director of a "musical" in a high school of limited enrollment would do well to investigate special materials written specifically for high school production.

3. High school music directors can explore the possibility of editing and re-writing productions of opera to effect compromises that allow students the cultural advantages of producing the opera in the high school.

Microfilm $3.00; Xerography $9.45. 209 pages.

Order No. 66-15,060

THE STAGE BAND AS PART OF THE HIGH SCHOOL MUSIC PROGRAM

Lowell E. Weitz, D.M.A.
University of Missouri at Kansas City, 1967

ABSTRACT

Due to a lack of understanding of the values of the stage band in the high school music program, prejudices and resistance to its implementation have resulted. Despite these prejudices, many music educators have channeled the enthusiasm and interest of the teenager into this new area of instruction. Therefore, the problem of what part the stage band should play in the high school music program, and how it can be implemented, is a vast new domain for research.

The stage band is new to the public school program and necessitates careful organizational procedures. The director must devote special attention to acquainting the administrative body with the values of the stage band as a part of the music curriculum. He must be aware of the many purposes of the stage band. Teaching mental and musical discipline, and raising the proficiency level of members in the various musical groups through stage band performance are two of the major purposes which offer the stage band a reason for being.

The function of the stage band differs in some ways from the orchestra, concert or marching band, and choir. It demands that the individual develop self reliance in that although he is soloist, he is subjected to the discipline of ensemble playing. The development of improvisational techniques is unique to the stage band.

Rehearsal procedures for groups common to the high school music program are similar in many respects. However, the stage band offers new challenges. The previous lack of published literature which might be studied is now being remedied. The challenge and opportunity of using unusual instrumental combinations is almost limitless. The stage band offers yet another contribution in the study of harmonic structure and chord building. These challenges must be met by employing techniques which were unfamiliar in past years. Knowledge of arranging techniques improves the overall musicianship of the director by acquainting him with the practical usage of all instruments, as well as scoring procedures.

Jazz, our truly American art form, is the source which supplies the stage band with literature. Following the baroque era, very little opportunity to study improvisation has been afforded the student musician. The stage band fulfills this long neglected aspect of musicianship. A knowledge of improvisational techniques employing *standards'* and *blues'* chords is therefore considered essential if the art form is to be performed correctly.

The combo may be considered as a smaller version of the stage band. It affords the player more opportunity to display individual technique, and permits the usage of unusual combinations of instruments. This unfamiliar procedure proves especially valuable in the smaller school where full instrumentation is often lacking. The practical value of the combo is enhanced by its portability.

Presentation of the stage band offers problems which are more complex than are sometimes apparent. The term "public relations" seems to have assumed the meaning of "selling." While "selling" may to a part, the complete concept requires consideration of the many factors leading to eventual school-community leadership.

Jazz is in a constant state of evolution. Although it first served as functional music, as did the early dance forms, it has come to be recognized as an accepted and respected segment of American music. The public can be made aware of the real value of jazz. This can best be accomplished by the music educator through an understanding of the socio-economic forces at work in the community.
Order No. 67-10111

A STUDY OF THE EVOLUTION OF CRITICISM AND PRINCIPLES OF BAROQUE IN THE ARTS

Richard A. Luehrman, Ph.D.
Florida State University

ABSTRACT

An investigation was made of a selection of critics and historians of the arts who have written about the seventeenth-century.

The purpose was to gain insight into their attitudes and understandings of both the term *Baroque* and the configuration of the components which make up the style.

The first chapter is devoted to the investigation of definitions of the term *Baroque* as it first appears in eighteenth-century criticism, and as it evolves to the middle of the twentieth century. Its origin as a term is considered. The theory that it is a mnemonics word connected with the syllogistic moods of thirteenth-century scholastic philosophy is noted as is the possibility of its derivation from Portuguese fishermen's descriptions of irregular pearls found on the seashore.

Chapters two through five deal with the attitudes of critics toward the style. Selected critics from the eighteenth-century to the present are used to exemplify the changing attitudes. Seventeenth and eighteenth-century critics are shown to be more concerned for specific artists of the period than for an overall style. The criticism suggests no coherent style which could encompass the entire seventeenth century. Nineteenth-century critics are seen generally to consider the period as a decadent aftermath or late phase of the Renaissance. The Baroque style is thought of as a grotesque exaggeration which is in bad taste. This attitude is shown to exist among some early twentieth century critics as well. Attention is called to the importance of Heinrich Wölfflin and Oswald Spengler as their work influences more positive attitudes and leads to more objective investigations of the Baroque style. The development of more complete interrelationships among the arts by critics in the nineteen forties is noted with particular attention paid to the contributions in the *Journal of Aesthetics and Art Criticism.* Finally tendencies are noted toward oversimplification of style discussions by many late critics who seek to explain the entire style and the entire period in one-word synonyms for *Baroque*.

A re-examination is made of the principles of the Baroque style. Organization is considered as the primary source of any expressive style. Style principles are seen to derive from the particular expressive handling of the focal point, system of continuity, and system of balance within the organizational scheme of *Baroque*. This organizational system of *Baroque* is then applied to specific examples in the visual arts, literature, and music. Interrelationships among the arts are reaffirmed as a result of parallels which are established in the Baroque organizational system as it exists in each of the arts. The system of dynamic moving balance which involves the audience or viewer intimately in the work is seen as one of the prime factors in the establishment of Baroque expression. The interactions of focal point, movement, contrasts, tensions and resolved conflicts are seen to work together intimately and instantly to create the dynamically balanced expression of power which is the Baroque style.

A SELECTED AND ANNOTATED LISTING OF 20TH CENTURY ENSEMBLES PUBLISHED FOR THREE OR MORE HETEROGENEOUS BRASS INSTRUMENTS

John Shoemaker
Washington University, 1968

ABSTRACT

The purpose of this dissertation is two-fold: first, to determine which 20th century brass ensemble scores are considered to be the outstanding literature worthy of performance by heterogeneous brass groups as designated by brass experts throughout the country; and second, to provide analysis and annotation of each of the selected scores for use by directors of this medium.

The procedure has been to compile a list of 20th century brass ensembles as recommended by Mary Rasmussen, editor of *Brass Quarterly*, and Robert Ryker, editor of the chamber music section of *Brass World*, and forward this combined listing to forty members of the National Association of College Wind and Percussion Instructors who were selected by the president of that organization as specialists in the brass chamber music field throughout the United States.

This combined list was divided into sections according to number of performers. Each NACWPI member was informed of the origin of the list and requested to add any scores he felt should be represented as outstanding and to delete those scores felt to be of doubtful musical value.

Thirty-five of the forty questionnaires were returned with fifty-eight scores being recommended for the selected list. Each of these scores was subjected to analysis on the basis of the following criteria: number of instruments, number of movements, structure of phrases, structure of thematic/motivic material, structure of meter, harmonic characteristics, textural characteristics, and instrumental characteristics.

An examination of the listing of characteristics as determined by the analysis of the fifty-eight scores revealed certain patterns of compositional techniques used by 20th century brass composers. These compositional techniques were then compared with those techniques used by composers of ensembles randomly selected from the corpus of brass literature not on the selected list. The differences evinced are significant because they shed some light on the thinking of brass experts in the United States regarding what are apparently considered to be desirable brass compositional techniques as compared to those techniques which are thought to be less acceptable at this time.

A SELECTED LIST OF TWENTIETH CENTURY ENSEMBLES PUBLISHED FOR THREE OR MORE HETEROGENEOUS BRASS INSTRUMENTS

John Shoemaker

The scores listed below have been selected by brass experts who are members of the National Association of College Wind and Percussion Instructors. The format is as follows: COMPOSER, TITLE, (Year of Composition). INSTRUMENTATION, (indicated in the following order: trumpet, French horn, trombone, tuba, baritone). PUBLISHER. YEAR OF COPYRIGHT.

MIXED BRASS TRIOS

Bassett, Leslie. *Brass Trio*. 1110. ACA, 1957.
Bentzon, Niels. *Trio*, (1952.) 1110. Hansen, 1964.
Bialosky, Marshall. *Two Movements*. 1110. King, 1954.
Cabus, P. *Sonata a tre*. 1110. Maurer, 1962.
Glasser, Stanley. *Trio*. 2010. Musica Rara, 1959.
Louel, Jean. *Trio*. 1110. CeBeDeM, 1956.
Marek, Robert. *Trio*. 1110. King, 1959.
Meulemans, Arthur. *Trio*, (1933). 1110. Brogneaux, 1950.
Muelemans, Arthur. *2e Trio*, (1960). 1110. CeBeDeM, 1961.
Poulenc, Francis. *Sonata*, (1922). 1110. Chester, 1924.
Quinet, Marcel. *Sonata a Trois*. 1110. CeBeDeM, 1961.
Sanders, Robert. *Trio*. 1110. King, 1961.
Scharres, Charles. *Divertimento*. 1110. Brogneaux, 1958.

MIXED BRASS QUARTETS

Addison, John. *Divertimento*. 2110. Williams, 1954.
Andriessen, Jurriaan. *Introduction and Allegro*. 2110. Donemus, 1958.
Baker, David. *Hymn and Deviations*, (1957). 1111. MBQ, [n.d.]
Berger, Jean. *Intrada*. 2110. King, 1961.
Bergsma, William. *Suite for Brass Quartet*. 2010 baritone. Carl Fischer, 1946.
Bright, Houston. *Legend and Canon*. 2020 or 2110. Associated, 1953.
Frackenpohl, Arthur. *Quartet*. 2020. King, 1950.
Haines, Edmund. *Toccata*. 2020 or 2110. King, 1949.
Hindemith, Paul. *Morgenmusik*. 2020. Schott, 1932.
Hovhaness, Alan. *Sharagan and Fugue*. 2110. King, 1950.
Jacob, Gordon. *Scherzo*. 2110. Williams, 1954.
Kay, Ulysses. *Quartet*. 2020. Peer, 1958.
Keller, Homer. *Quartet*. 2110. King, 1954.
Piket, Frederick. *Dance and March*. 2020. Associated, 1952.
Sanders, Robert. *Suite*, (1949). 2020. King, 1956.
Schuller, Gunther. *Little Brass Music*. 1111. Mento, 1962.
Starer, Robert. *Dirge*, (1955). 2020. Presser, 1957.

MIXED BRASS QUINTETS

Adler, Samuel. *Five Movements*. 2111. King, 1965.
Arnold, Malcolm. *Quintet*. 2111. Paterson, 1961.
Bozza, Eugene. Bis. 2111. Leduc, 1963.
Bozza, Eugene. *Sonatine*. 2111. Leduc, 1951.
Cheetham, John. *Scherzo*. 2111. Avant, 1965.
Dahl, Ingolf. *Music for Brass Instruments*, (1944). 2120 or 2111. Witmark, 1949.
Frackenpohl, Arthur. *Brass Quintet*. 2111. Elkan-Vogel, 1966.
Hartley, Walter. *Quintet*. 2111. Tenuto, 1963.
LeGrady, Thomas. *Suite*. 2111. MBQ, 1962.
Presser, William. *Folk Song Fantasy*. 2011 baritone. Composers Press, 1955.
Sanders, Robert. *Quintet in Bb*. 2120. Mercury, 1948.
Schuller, Gunther. *Music for Brass Quintet*. 2111. Associated, 1962.
Zindars, Earl. *Quintet*. 2111. King, 1958.

MIXED BRASS SEXTETS

Bezanson, Philip. *Prelude and Dance*. 2121. Interlochen, 1961.
Kroeger, Karl. *Canzona III*. 3030. Presser, 1968.
Osborne, Willson. *Prelude for Brass Instruments*. 2220 or 3030. King, 1952.
Viecenze, Herbert. *Blaser Suite*. 2220 or 3030. Hofmeister, 1956.

MIXED BRASS SEPTETS

Berezowsky, Nicolai. *Brass Suite, Op*. 24. 2221. Mills, 1942.
Ruggles, Carl. *Angels for Muted Brass*, (1938). 4030. American Music Edition, 1960.
Weber, Ben. *Colloquy, Op*. 37. 2221. ACA, 1955.

MIXED BRASS OCTETS

Zillig, Winfred. *Serenade #1*, (1928). 3221. Barenreiter, 1958.

MIXED BRASS ENSEMBLES FOR NINE OR MORE INSTRUMENTS

Arnell, Richard. *Ceremonial and Flourish*. 3430. Associated, 1948.
Cobine, Albert. *Vermont Suite*. 4341 baritone. King, 1957.
Hartley, Walter. *Sinfonai #3*. 5431 baritone. Tenuto, 1966.
Holmes, Paul. *Suite for Brass*. 3431. Shawnee, 1960.
Kauffmann, Leo. *Musik*. 3431. Hofmeister, 1957.
Merriman, Thomas. *Theme and Four Variations*. 4231 baritone. Associated, 1951.
Riegger, Wallingford. *Nonet for Brass, Op*. 49. 3231. Associated, 1951.

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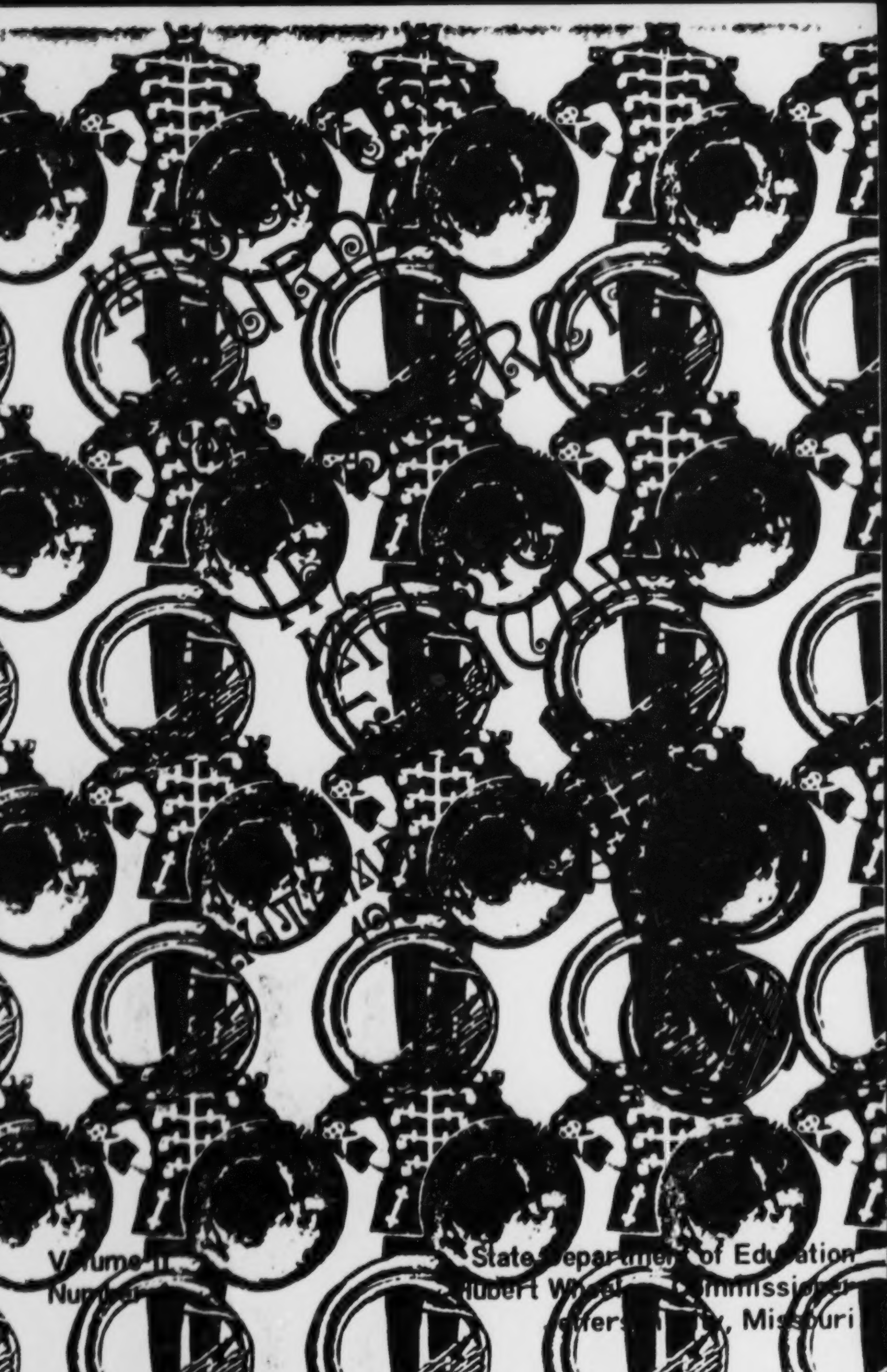

Volume II
Number

State Department of Education
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MISSOURI JOURNAL OF RESEARCH IN MUSIC EDUCATION

Published by the Missouri State Department
of Education

Volume II 1970 Number 4

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MISSOURI JOURNAL OF RESEARCH IN MUSIC EDUCATION

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PREFACE

The *Missouri Journal of Research in Music Education*, published as a Bulletin of the State Department of Education, is devoted to the needs and interests of the school and college music teachers of Missouri and the nation. This issue, Volume II, Number 4, is the ninth to appear in as many years.

The members of the Editorial Committee are grateful to those readers who have written suggestions concerning the content of past issues and request that criticisms and suggestions, always welcome and never unheeded, again be sent to the Editor concerning the content of this issue. We strive for a reasonable balance between music theory, history, philosophy or aesthetics, and pedagogy. It is difficult to judge how successful we are without reader response.

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- THE EDITOR

Research in Music Education: Functions and Constraints

Henry L. Cady[*]
Ohio State University

N.B. This paper, in a slightly different form, was given at the College and University division meeting of the Missouri Music Educators Association Convention in Columbia, Missouri, 1970.

The generalizations expressed here are basically derived from a concern about the well-being and the responsibilities of Music Education. The information which underlies this concern was acquired through my own research activities and the research activities of our colleagues across the nation. Included in that concern is the issue of whether or not we are a profession with a peculiar contribution to make. It is true that there are several definitions of a profession but all of these definitions have a common denominator. That common denominator is that a profession has a body of knowledge which is applied by people. This leads to the concern for a clearer understanding of what Music Education is, the knowledge that is peculiar to it, and the difficulties as well as the vicissitudes of those who undertake the process of finding new knowledge peculiar to our needs.

The beliefs in what Music Education is, what it should be doing, and who its relatives are in academe are beliefs which must be considered. We must consider them because there is evidence of confusion concerning these issues among us. The evidence is readily found in the qualities of our literary expressions and, especially, in the qualities of our research reports.

For some reason we are a confused people and our confusion centers on two basic questions. Before discussing directly the function of and constraints on research in Music Education, perhaps it would be well to consider some contentions and disturbing thoughts related to these two questions. First, there is the question "What is Music Education?" We have been an endeavor in tax-supported institutions for over a century, i.e., we have used entrusted funds. The proof of our effective use of this time and these monies lies partly in such evidences as in the quality of music used on a demand basis by the mass media of communication and in the political decisions about the school curriculum. The persons who run the mass media were our students. The adults who listen to mass media were our students. Political decisions affecting music in the schools are made by persons who were our students. Considering what our former and present students are revealing in these connections, it seems to follow that our objectives are confused and our procedures are rela-

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tively ineffective. We actually do not know who we are or our role in academe. We have never calculatedly and collectedly tried to define our business and ourselves by identifying the central *differentia* which distinguishes us and what we are about. In brief, we have never adequately answered such questions as "what is Music Education," "what is it for," and, equally important, "what is a Music Educator?" Unless we can identify our objectives and what we are, how can we define the kind of knowledge we need? Unless we can identify the *kind* of knowledge we need, how can a body of knowledge evolve? We are facing one large problem web interwoven with our undifferentiated objectives, our confused procedures, and our state of ignorance about ourselves.

A second basic question is "what is research in Music Education?" This is a qualitative problem requiring for its solution preliminary identification of characteristics and properties. Research itself is a process. Research in Music Education, then, is a process but to what end or what objective? The variety of topics in the research of music education causes one to infer that there is no central concern of the music educator and there is no basic objective for which the researcher seeks valid knowledge. For example, the problems of how to teach have had short shrift from the Music Education researcher. A case can be made for a person who considers himself to be a doctoral candidate in Music Education and who conducts a typical musicological study or composes music for professional level or adult level performances. But is the case good enough? There is the question of priorities, relevancies, and professional concerns. Because of the dearth of knowledge about the teaching-learning process in music at any level of education, one is inclined to say that the case is never good enough. In another way, the issue can be emphasized by asking who will provide the knowledge about the teaching-learning process in music? Whose specific concern and responsibility is this?

In addition to this substantive aspect of research in Music Education, there is also the problem of finding and developing people to do this kind of research. The meaning of the word research, the meaning of the process of inquiry itself is a source of confusion. For example, in response to a request for titles of research from the period 1930-1962.

> . . . 449 titles were reported by faculty respondents as personal research projects. Among these, only twenty percent (89 studies) could be considered research. The remainder were musical compositions and essays, some of the latter being on topics removed from the central concerns of Music Education.[1]

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We are confused as to what research means in terms of appropriate methodologies and in terms of our responsibilities to the profession to provide research which is more than an academic exercise in the perjurative sense. It follows that we are confused about how to develop researchers who can fulfill these responsibilities.

A third aspect to the present state of research in Music Education is the interaction and the intercourse between the researcher and his colleagues who should be using his findings. At the time this is being presented, there are few published texts for Music Education which include the findings of research in any methodical manner. How to infuse research findings into the work of the music educator is part of the research problem.

The following discussion is an attempt to analyze these aspects or problem centers in Music Education research. Before taking these up one at a time, certain assumptions must be established, such as the meaning of "function" and "Music Education" as well as the basic relationship of research to its discipline.

The Function of Research in Music Education

When one speaks of a function, he speaks of a process, an action, or a role. It seems that our fundamental problem in Music Education is that of deciding what role is appropriate to us. If our role were delineated or characterized such that a distinguishing characteristic were found, then many ambivalences would disappear. Such a delineation is a complex task and a laborious one. It is not the purpose here to undertake such a task. For those who are interested in a detailed semantic analysis of the term "Music Education" it might be of some use to examine an exercise entitled "Toward a Definition of Music Education" which appears in the document "A Conference on Research in Music Education." That exercise concluded with the following definition:

> Music education is the practice of, the participation in, and the study of the process involved in the teaching and learning of music within educational institutions in order to fulfill three fundamental objectives, namely, the transmission of the cultural heritage in music, the acculturation of the individual to his musical environment as a participant, and the development of the individual's aesthetic sensitivity, as these may be achieved under the incluence of the constraining factors.[1]

The reaction to this definition has been mixed, not only in terms of its cognitive values but also in terms of its affective values. The definition implies that few of us, if any, are meeting our responsibilities. In the general education sense, this definition, when used as a model, characterizes us as not succeeding in doing in the schools what we ought to be doing. There are many reasons for our present state but first and foremost of these is the peculiar evasion of the obligation to analyze and define what we are, what our responsibilities are, and what we are about. Of equal importance is our belief that the calculated guess rather than valid information is an appropriate basis for our teaching methodology. The implications of this belief system for the future of our scholarly inquiry are the principal concern of these remarks. As a basis for considering this belief system, this discussion assumes that the definition stated above is an adequate one.

Another assumption underlying the following discussion must be expressed. Those of us who are interested in research find ourselves pigeon-holed by some of our colleagues who prefer their life neatly organized into simple patterns. For them, it must be stated again and again that research is a servant to the art. In addition, research on how to teach music and on all those elements in the methods of teaching the art are not analyses of the art per se. An analysis of how to teach is a service to the teacher of the art. Too, research is not an end in itself. Research as an end in itself is literally nonsense. Certainly, research is self-perpetuating in a single life span because it must continue until all questions are answered, if that can ever be. But its primary purpose is not self-perpetuation but the seeking of answers to questions. In brief, one can find the answer to this riddle by asking the question, "If there were no questions, would there be research?" As persons concerned with research and how to do it, researchers in Music Education are servants to their colleagues and, ultimately, servants of the art they love.

There are gaps in our information about how to teach. More role for Music Education research. The idea of priority is one of these dimensions. There are different kinds of priorities such as the gaps in knowledge, the relative usefulness of knowledge, or the basic relationships of efforts to central variables which distinguish the profession's concerns. One can justifiably state that all of these have been neglected by us. A case in point are the kinds and content of the bibliographies published by the Music Educators National Conference which express so well the confusion in our self-concept. As one looks at these, he is forced to ask what is the Music Educator doing that the theorist, historian, composer, and performer in music is not doing? How does he justify himself in *academe* as being worthy of a particular curriculum if he is not producing uniquely different people and is not researching problems appropriate to the needs of these unique people. In short and conversely, why not close down all Music Education endeavors in the United States as mere duplications of what the historians, the theorist, the composer, and the performer are already doing and have been doing for centuries?

There are gaps in our information about how to teach. More properly, one could say that the little information we have is so scant that our posture as a discipline and a profession can be challenged. There is a great quantity of information which student researchers in Music Education have produced which is worthless as providing answers to questions about how to teach our musical heritage and the skills of participation. We do not even know what an aesthetic experience is in musical art; we have only beliefs arising out of many personal experiences and no information as to how to teach for aesthetic experience. Our situation is grave in the context of the contemporary, vigorous changes in education. The gravity of the situation may be realized if one tries to suggest some change in the procedures of music teaching based on valid information. There is so little one could suggest. If the function of the profession's research is to provide basic information for that profession, music educators may justifiably consider their research efforts inadequate. It follows that this aspect of the role of research in Music Education needs considerable deliberation. The kind of information that is the primary concern of the researcher in Music Education must be better understood. In addition, the methods for obtaining this information must be better understood. In brief, research in Music Education must provide the profession with basic, valid information about music students, music teachers, and the interaction between these kinds of persons within the teaching-learning process in the educational situation.

Another dimension to the role of research in Music Education is the responsibility for the development of researchers. There are some peculiarities in the process of developing a researcher out of personnel in the arts which must be accounted for. First, many teachers in the arts seldom consider teaching as a first choice of livelihood. For the most part, they accept teaching their art because a livelihood using their art in any other way is not possible at the present time except for a few people. Negatively speaking, one could say that generally music teachers are diverted performers, composers, theorists, and historians. It follows that many past researchers in Music Education have been drawn from these ranks. This is evident as one considers the content of research performed at any level of sophistication. Typically, one finds that these people have not been initially intellectuals but have been activists who have retrained to function more adequately as intellectuals. In Bloom's terms, these persons have functioned in the effective and psychomotor domains primarily and have retrained to function better in the cognitive domain. When such a person goes into the role of a researcher, he typically brings with him former attitudes and self-perceptions. Because research *per se* is basically a cognitive endeavor, the education of researchers from personnel in the arts involves a complex of problems evidently not present in other areas of academe.

A second peculiarity is found when one speaks of developing researchers in that he no longer is discussing the traditional patterns of courses nor is he speaking of the traditional general examination for the doctoral candidate. Earlier in this paper there was a reference to the relatives of Music Education. A short list of these would be (in the year 1970) psychology, sociology, anthropology, statistical methods, computer usage, business administration, information sciences, history, philosophy, and the host of hybrid endeavors in teacher education, to name a few. No musician can encompass all of these in his education. No doctoral general examination can include all of these as a *de facto* requirement that the individual know all of these. It follows that the meaning of advanced education must go through a fundamental change. It also follows that the quantity of knowledge at advanced levels is so great that we had better revise our concepts of content, intensity, and duration of both undergraduation and graduate education. Further, sooner or later, we will admit that the traditional concept of a liberally and technically educated individual must change from how much a person knows to how well he uses the basic concepts of the various fields of knowledge and the methods for obtaining minutiae where such is needed. It could be that the methods of learning rather than the information of learning will become the general examination content for the doctoral aspirant.

The distinction between method and content is an appropriate one here. A teacher is a methodologist and only a myopic or inexperienced person would content otherwise. His concern for content is not its acquistion for his own use but his concern is the imparting of correct content to his students. His *primary* concern is *how* to teach it to his students. In another way, the researcher is also a methodologist. He seeks answers to questions but his quest is the primary concern. His basic need is to know how to go about the correct way to find an answer to the right question. Thought process and logic as well as the manipulation of instruments are more important to him than the answer to a question or the proof of an hypothesis because having answered a question or found the solution for one problem he turns to other problems confronting his profession.

Just as there are different kinds of teachers and roles for educators requiring different kinds of curricula, there will be different kinds of music educators in research who will proceed through a variety of curricula. In the first place, one can point to the 1958 NSSE Yearbook, *Basic Concepts in Music Education*, as a basic contemporary philosophical expression in Music Education which one can consider to be an extensive, fundamental, and systematic effort.[3] The philosophical positions expressed in that volume were not by musicians but by sympathetic and interested philosophers. As an endeavor, Music Education has not been interested in philosophical inquiry. It has been an activistic and an intellectually moderate endeavor. As a result, we have no major systematic philosopher. If we do, he is hiding his light under a bushel.

By the same token and for the same reasons, we do not have a single major legitimate historian of Music Education among us. We need these badly. Without the fundamental logic, the great principles, and the calm security of wisdom derived from a consideration of being and its evolution, we will continue to fight holding actions as other firmly devolped areas of knowledge in academe pressure us to get out. How can we know where we are without the context of the past as a reference point? In reality, the past is the only ultimate reference point man has because all his dreams of the future are mere extrapolations of the past. How can we avoid superficial experimentation without the logic essential to the questioning of assumptions? How can we know the full quality of a new idea unless we check against history to determine its possible existence and rejection in the past? Without a history of who we are in terms of what we have done, how can we demonstrate our value in the stream of human existence? There is more than one form of human activity that has died out because other forms have obtained a greater priority in the history of this earth. There are those who would say we are so ambivalent and ineffective that we have no place in the schooling of the child as an essential endeavor. The details of our history are so disorganized and buried that we show little strength in arguments defending our improvements and the breadth and depth of our effectiveness. We are in need of factual information at a time in the evolution of man's social system when the lack of information is a menace in itself.

When one speaks of research today, most frequently the methods of the natural scientist and the social scientist come to mind. In Music Education, the acceptability of the social scientific method has increased as the social aspects of musical art have been more defini-

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tively recognized. The Research Conference stated the case in this manner:

> Music is a man-made phenomenon and the making of music is a form of human behavior. Because human behavior as well as the products of human behavior are observable, man and his music are subject to critical examination from many points of view. These points of view do not preclude the aesthetic values of music nor the concern for those values, but they do encourage scholarly research in areas which are amenable to studies of human behavior. Such studies would include, basically, the analysis of the human processes as they function in the making of music. In Music Education, they would include the student of music and the teacher of the student of music as well as the content appropriate to the experiences desired for the student of music in the school.[1] (P. 28)

There are basically two kinds of social scientific procedure -- description and experimentation. In their typical usage, both of these require forms of self-discipline which the artist finds awkward, namely, strict verbal and numerical logic and patient replication. The basic difference between the arts and the sciences seems to lie here. The process of strict logic is inappropriate to the intuitive leaps of the atrist's mind. Where such intuition occurs in the scientific mind, these are checked through steps of strict logic at a later time. Not so in the arts. Once the product is produced, it is done and there is no point in returning to the process of logical reconstruction because replication of his own work is not a problem for the creative artist. His intent is to produce ever anew. For him, face validity is sufficient. His objective is the discovery of new avenues, new techniques for finding and knowing his own internationalization of reality and for expressing it. On the other hand, the scientist finds validity in consistency. He discovers consistency by being certain that the same thing can be done many times. Face validity is at least tentatively acceptable to him while the meticulous process of strict logic proves out the well-educated guess.

Because Music Educators come to the threshold of research by way of musical art, a very great change is required in those who would become sophisticated in the methodology of the behavioral scientist. As has been stated earlier, the majority of the problems with which the Music Educator copes are behavioral. In order to find answers to behavioral questions, it is evident that the methods for analyzing human behavior must be used. These are the methods

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of the behavioral scientist. It is in this mode of inquiry that the Music Educator has produced a prodigious amount of inadequately performed research. The problems have been behavioral but the methods have been library searching and the sharing of quasi-educated guesses. Where the methods of the social scientist have been attempted, they have been used well in a relatively few instances. The astounding part of this situation is that information about appropriate methods for analyzing behavioral problems has been available for several decades. We are yet to accept the idea that there are several methods of analysis available to us and that each problem has an appropriate method. A researcher interested in behavioral problems must at least know that these methods do exist even though he cannot perform everyone of them without assistance. His educational program must be directed toward the acquisition of this knowledge.

There is a great lag between our meager sophistication and the sophistication of other areas of academe. As has been contended here, we have yet to produce a large group of basic scholars in the traditional modes of inquiry. In addition, we have yet to realize the necessity for rethinking institutional organization for research. The quantity of information needed obviates the usual *ad hoc* research enterprise of the scholar who is dedicated enough to add such an enterprise to his full load. There are some problems which the single scholar can undertake, if given the appropriate support but there are many others beyond the energies and time of a single individual. The processes of research are no longer simple, but complex. These processes no longer end with the traditional effort of finding, organizing, and teaching new knowledge within the collegiate setting. The rest of the process of research is now conceived to include the responsibility for the use of research findings in the setting for which the findings were intended. It seems that a program for research must consider now the gamut of responsibilities from the conception to the utilization of knowledge. Music Education is ill-prepared to fulfill such responsibilities.

The semantics concerning these new functions in research, the dimension of utilization, are still to be firmly established. These new functions are divided into two basic kinds. One of these broad functions is termed "development." This is the process by which research information is (1) *transmitted* to persons who understand the language of research, (2) *translated* into proper language for a wide variety of audiences, or (3) *transformed* into useful practice. By transformed into useful practice, one means the development of curricular designs and materials based on research information. It is evident that the development specialist is a vital concept and is al-

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ready existent in the fields of geography, mathematics, and science. There are peculiar problems for Music Education in this process which have been given little consideration. Music Education is comprised of two different endeavors or processes — the class and the performing group. The kind of knowledge, the differences in the implementation of knowledge, and basic difference in the nature of interpersonal relationships between pupil and teacher — all of these and more present intriguing problems before us which occur in few other areas of education.

In addition to development, there is the second task or function of dissemination which must be undertaken. In some ways, this is a teaching function. At the same time, it is a validating process for research findings — the proof and the pudding idea. There are successful techniques for this process but a basic ingredient in dissemination is the involvement of persons who understand the research which underlies the developed materials and techniques being disseminated. It seems crucial that one makes a distinction between the dissemination of materials derived from research and selling. The issue here is the possible loss in validity of intention of such a process is made the responsibility of laymen. To put it another way, the validity of research findings on the teaching-learning process is ultimately tested in the utilization of those findings in the teaching-learning process and in many different situations for that process. Only the sophisticate in research can make value judgments about that validity.

Because this new dimension of implementing what we find to be valid has been added to research, a basic reorientation of concepts, people, and programs lies before much of education research. In this, we are not alone but we have yet to begin preparing programs for people of the kind who can convert the products of our research and encourage our colleagues in the schools to use them.

The Constraints on Research in Music Education

As one considers the new dimensions to be undertaken and the personnel to be educated for these undertakings, there are realistic aspects in the research process which cannot be forgotten. These can be called the conditions of research or the constraints on the research process and on the researcher. When one thinks of supporting a researcher, educating researchers, and doing research, these constraints have meaning.

There are two basic kinds of constraints which affect the research process. The first of these is external to the process but influences the process. The second is internal, that is, it includes factors in the process, including the researcher himself.

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External Constraints

There are several categories of external constraints each of which may be dominant at any one time but all of which are present at the same time. First, there is the economic constraint. An obvious kind of economic factor is direct funds for support of projects, either local or off-campus funds. Less obvious is the general ability of an institution or school system to support a researcher by having enough staff to fill committee functions, teach, and perform secretarial tasks as well as the provision of consulting and hardware services.

Second, there is the restraint of political pressures, real and believed to be operating. Within his institution, the researcher sometimes stands in a threatening posture as an innovator, a questioner who raises issues that challenge the professional posture of his colleagues, and a recipient of special arrangements in terms of time, money, and space. Outside the institution, there is his profession which seems to seek the mean rather than the first or second standard deviation of innovative practice. There are questions about his profession he hesitates to investigate. There are hypotheses about the practice of music in the schools which have potent implications for collegiate and university relationships with the school systems these serve, and which one is reluctant to test.

The third external constraint is the factor of demography. One can define a problem but then may be able to do nothing in the way of an investigation because the population is not available. The location of the researcher may well determine what he can research and who his subjects can be.

Fourth, there is a complex professional posture of the researcher in Music Education. In a very real sense, Music Education is a hybrid, a joining of the profession of music with the profession of education. Neither of these expects certain kinds of research from us. In so many places, the Music Educator is seen by his colleagues in education as a musician. Musicians are just not supposed to do such things as behavioral studies. In the profession of music, there are those who do not want behavioral studies. In brief, Music Education is in some kind of a no-man's land in a number of institutions that one can name. This, of course, creates a peculiar posture for the person who does believe that most of our problems in school music are not musical but behavioral.

Finally, a formidable external constraint is the system of music education itself. Generally, the system seems to be organized for the making of music and the education of the makers of music. There is little question that the making of music is an appropriate goal for music education but should it be the primary goal? Is this what is meant by music for every child? Is not the making of music and the functioning artist approach to the education of the young more appropriately one of the goals and a means to a larger and more important goal for music education? If so, the entire system must revise itself, including the purposes of the professional societies which support the system. A different system would require a different set of competencies in its practitioners. It would require a different kind of body knowledge. It would, therefore, require a different set of priorities in its research.

Internal Constraints

The internal constraints in Music Education research also fall into several categories. First, there is the investigator himself. Most researchers in Music Education are people who have undertaken several types of education. They have retooled, so to speak. They too have been performers and teachers. In some ways, they have an identity problem as they stand in their no-man's land. The researcher must be a person of persistent curiosity, independent, and relatively self-sufficient. He must be a gambler, willing to take the chance of failure and willing to gamble on acceptance by his peers when he succeeds only in achieving a good try. Too, there must be within him the knowledge of the several modes of inquiry even though he may not be expert in all.

The second internal constraint is the nature of a problem the researcher wants to investigate. Some problems can be stated but there is no way at the present time to investigate them adequately, e.g., such problems as native musical ability or the isolation of musical preference as a social variable. Other problems are interesting but in a utilitarian sense they are of little immediate value to the profession and one hesitates to research them. Still, other problems are seen by an investigator as basic and crucial but the imaginative or uncreative people around him do not understand the import of what seems to be obvious and is not, or appears to be so esoteric and inconsequential and is not.

A third constraint is the methodology available. Here one can cite comparative techniques in teaching or learning. There is always that almost uncontrollable variable, the teacher. In brief, the confounding variables in our area of concern are endless and our methodology can hardly meet our needs.

Finally, there is the internal constraint of adequate dissemination of research information and the utilization of research products. This may also be considered an external constraint. It is an internal constraint because of what it does to the motivation of the researcher. Many of us live on a two-way street. We have had research reports rejected and, as reviewers, we have rejected research reports. There are few perfect investigations and the acceptable breadth of variation in quality is a difficult question for any reviewer. Yet, there must be encouragement for those who pursue research. More numerous outlets for research findings must be available. Particularly, there must be an incorporation of research findings in the methodology provided prospective teachers. Somehow, there must be a greater use of research if a research community is to grow much more rapidly than it is growing. The researcher is like any other human being. He wants to feel useful, to have his products used, to see change in school music as a result of what he has done. The improvement of dissemination is not only a benefit to those who will use new knowledge but an encouragement to those who undertake the difficult process of obtaining that knowledge.

Conclusions

These remarks about the function and constraints in Music Education research have been rather heavily laden with negative connotations. But as one examines the tremendous strides being made by the truly innovative educators in the social and physical sciences, mathematics, and language, one senses an everwidening gap. The gap is between the arts and the rest of the educational world.

Music Education is confronted with a complex of challenges. It has been the intention of this discussion to denote some of these and to indicate what must be done. It is recognized that these remarks raise some interesting and probably frustrating questions. For example:

1. Can any one institution educate the variety of persons needed?
2. How can Music Education produce such scholars when it does not now have a faculty, generally, which can provide the necessary guidance?
3. Is it appropriate for researchers on behavioral problems to be nurtured in a musical or social scientific or educational or liberal arts setting?
4. What are the prerequisites to the adequate performance of research on problems in Music Education in terms of curricular experience and an individual's attitudes?
5. Where does the responsibility lie for the guiding of persons into research relevant to the needs of Music Eudcation?
6. What are the institutional forms of organization which will be conducive to the development of researchers of these various kinds?
7. What forms of institutional support for research can the field of Music Education expect and demand in academe?

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Needless to say, one could compose a lengthy list of questions related to the issues raised in this dscussion. There is a dimension to the problem that has been inferred and not discussed, namely, the institutional organization for research. This is a very complex problem filled with economic, political, and professional issues. But as one surveys the research scene of Music Education in the United States, he sees one ingredient that is crucial. Wherever research is being done, there is a state of good faith. The men who have accepted research positions and their administrative superiors operate in a state of good faith. When I receive notices of research positions and before informing my doctoral students and graduates about the position, I ask myself one question: Do they understand what a researcher is and needs, and will they guarantee him a research base of operations?

Fortunately, the profession is awakening to the realities of its stuation. It can be proud of a number of substantial contributions that have been made and are being made with increasing frequency. It can rest assured that a leadership in research is evolving as evidenced by the essentially valuable contributions of the Research Council in our National Conference. For example, pre-convention research workshops were being urged by only a handful of persons ten years ago. They exist today and will certainly continue. These activities and the many others that are burgeoning indicate that the concerns expressed in this discussion are becoming shared by more and more of our colleagues. This state of affairs is more than passingly important. It must be an ever present thought that no other group is going to answer the questions raised here or develop the necessary body of knowledge but Music Education itself.

FOOTNOTES

1) Henry L. Cady, *A Conference on Research in Music Education*. U. S. Office of Education, Bureau of Research Project 6-1388, The Ohio State University, May, 1967, p. 5.

2) *Ibid.*, p. 80.

3) See the articles by Harry S. Broudy and Foster McMurray. An exception to this statement may be E. Thayer Gaston; see his article in the same volume. The work of Schwadron in this area, to date, is a useful rephrasing and condensation of existing philosophies.

4) *Ibid.*, p. 28.

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The Black Musician in American Society

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The story of Negro music goes back to Africa where song was a medium by which the past was recorded. A tremendous oral tradition and literature took the place of the written word and acted as a reservoir for memories of the past. The custom and habit of singing and dancing as a means of historical, emotional and intellectual expression survived the awesome "Middle Passage" across the Atlantic and laid the foundation for the development of black music in the New World.

The story of the black composer begins considerably after the advent of the black man to the colonies of the New World. This delay is due in part to the fact that Africans came to the New World from many different points and tribes on the West Coast of the African mainland and spoke a variety of languages. Unable to read and write, and strangers in a new culture, the black man was not given any formal education because of the role delegated to him in this new society — that of a slave. Only when liberal-minded masters begin to free individual blacks and educate them, did the black man have an opportunity to turn to the formal composition of music.

The black composer began to make his presence felt musically in the nineteenth century, not only in America, but all over the world. In fact, there were black composers in France and Poland as well as in the Americas.

The black man, through his own distinct musical characteristics has made an artistic contribution which is a product of his environment. His race, in a biological sense, has had nothing to do with these characteristics. They are sociological in nature.

The influence of musical stylistic traits termed black has spread over many nations wherever the colonies of the New World have become homes of black people. These expressions in melody and rhythm have been a compelling force in American music.

The early sporadic efforts at musical composition by people of African descent is of great historic importance. Earlier black composers tended to compose in the black idiom because of their sociological environment, utilizing material based on black folksongs or which was folk-like in nature. In contrast, the contemporary black composer is writing in a manner which is no different from any other composer. He writes music that corresponds to his artistic emotions, within a framework of harmony, counterpoint, and orchestration that provides him with the broadest range of expression.

Neither the white or black communities know very much about the contributions of the black man in the field of musical composition. It is highly significant that the black man has been able to make these contributions under the most insuperable odds. In spite of his sociological environment, and in spite of the role delegated to him by society, the black man has been able to make an important and significant contribution to the composition of all kinds of music.

Little has been done to bring about an awareness of the contributions of the black man in music exclusive of the field of jazz. While there is an abundance of material about black musicians, it is scattered. The writer is presently involved in bringing this material together in a project entitled, "A Historical Study of Selected Twentieth Century Black Composers and Their Role in American Society." This paper is concerned with a portion of this study — "The Black Musician in American Society." A brief account of the black musician from the days of slavery to the present will be given.

The eighteenth century slave was rapidly assimilating the culture of this country where there were extensive contacts between the races. The blacks were learning to read and write the language prevalent among their masters. As an example, in New Orleans, many blacks learned French which was the language of the ruling class. In addition, many slaves became useful and skilled artisans. There is a considerable amount of evidence of the musicanship of the slave, and of the use made of it in the social and civil life of each community.

Eighteenth century advertisements for runaway slaves indicate that several were able to play musical instruments. Some examples are:

> Whereas Cambridge, a Negro Man belonging to James Oliver of Boston doth absent himself sometimes from his Master: said Negro plays well upon a flute . . . Boston Evening Post, October 24, 1743.[1]
>
> Runaway on the Monday the 7th of June, a likely Mulatto man named Francis, of middle stature; . . . plays on the fife extremely well . . . Norfolk and Portsmouth Chronical, July 10, 1800.[2]

The second half of the seventeenth century saw the emergence of the second generation of blacks who were Virginia-born and English-speaking. Planters then decided that the slaves had become "sufficiently civilized" to serve in the mansion house as well as in the field.

Colonial planters had brought with them from England a love for entertaining. For their music, the colonists imported from Europe their favorite instruments which house slaves were permitted to play. Among these instruments were the fife, the violin, and the chalumeau.

The role that slave musicians played in the social and civic life of the white community has been documented in the travel accounts of foreigners and visitors from the North. These accounts, limited as they are, do illustrate the point that black musicians were actively engaged in the social and civic life of the community. It is not meant to imply that blacks were engaged only as musicians. They were also cabinet makers, painters, plasterers, coopers and were engaged in many other crafts. In certain communities, in some crafts, there were more skilled slaves than there were skilled whites.[3]

While millions of blacks were in slavery in many sections of the New World, there were many free blacks who were befriended and encouraged by the whites in their communities to gain an education and participate in the arts. Many of the blacks were gifted, trained musicians who were composers and performing artists of outstanding ability. Their composition in America and around the world.

The free black population increased from five principal sources: "(1) children born of free colored persons; (2) mulatto children born of free colored mothers; (3) mulatto children born of white servants or free women; (4) children of free Negro and Indian parentage; (5) slaves who were set free."[4] It is generally agreed that the chief means by which the free black class was increased was through manumission.

The amount and kind of social relationship that existed between the free blacks and the whites were important determining factors in the degree of acculturation experienced by the blacks. In turn, the kind of music and music activity developed by free blacks reflected the extent to which they had assimilated the music and culture of the white man. As a result, there were wide variations in the kind of music absorbed from the white man's culture and the style of performance of it. With each passing generation, prestige values among some free blacks were based more and more on white values which in turn had a great effect on their musical values and musical styles as well as on the overt musical activities in which these blacks were engaged.

While free blacks were denied any extensive social contact with the whites of their community, New Orleans, which produced many outstanding musicians, was an exception. The free blacks of New

Orleans, because they were largely of mulatto origin, constituted a separate or intermediate stratum in the community. This free mulatto population was later "augmented by thousands of well-to-do and cultured mulatto refugees from Haiti in 1809 and 1810.[5]

While free black musicians were to be found in many cities of this country, especially during the nineteenth century, New Orleans produced a considerable number of black men who were outstanding in this profession. The music of the free blacks of New Orleans reflect not only the assimilation of the white man's culture but also the kind of training received by many blacks in the music conservatories of Paris, France.

Another important point to be considered is that the nineteenth century is the period marked by the great popularity of black-face minstrelsy as practiced by whites. Many of the free blacks felt a great compulsion to give the lie to the characterization of the black man which these minstrels were popularizing in England as well as in the United States.[6] By embracing the music of the cultured white man, the blacks set out to prove that they were capable of producing all kinds of music.

There is some evidence concerning the kind of music written and performed by free blacks who were trained in the music conservatories of Paris, France. One of the most notable examples is the music of Chevalier de Saint-George (1745-1799). Saint George, though not born in New Orleans but in Basse-Torre, Guadaloupe, was a mulatto who received his musical education in Paris. He was a pupil of Leclair on the violin and studied composition with Gossec.

Saint-George is known to have written: Six String Quartets in 1773; 10 Concertos for a principal violin and small orchestra, from 1775 on; *Symphonies concertantes* for 2 principal violins, sine datum; Three Sonatas for the clavecin or fortepiano, with accompaniment of an obbligato violin in 1781; and Three Sonatas for violin, published posthumously.[7]

The economic status of free blacks was not the same in all sections of the country. In the North, their economic condition was much less favorable than in the South due to the competition of white labor. In addition, Northern free blacks were frequently the object of violence on the part of white workers. This kind of treatment occurred especially during periods of economic depression.

In spite of these almost intolerable conditions, free blacks were able to become accomplished musicians and composers. Some received excellent press notices not only in this country but also abroad. In fact, several of these performers gave command performances before English royalty.

Noteworthy among the free black performers from the North were Thomas J. Bowers, tenor; Elizabeth Taylor Greenfield, soprano; John T. Douglas, violinist; Benjamin J. Janey, tenor; James Caseras, pianist and organist; and Peter P. O'Fake, violinist. Among accomplished performers from the South were John and E. Lambert, instrumentalists; Maurice J. B. Doublet, violinist; McDonald Repanti, pianist; Henry Corbin, violinist; J. M. Holland, guitarist; Eugene Convertie, pianist; and Constatin Deberque, conductor.

Minstrelsy, which originated among the blacks as entertainment for white masters on the slave plantations of the South, came to the white American stage as a counterfeit imitation of the black man by white actors. The social attitudes of the whites made the minstrel caricatures of the black man acceptable to the white public. The minstrelsy "fixed the tradition of the Negro as only an irresponsible happy-go-lucky, wide-grinning, loud-laughing, shuffling, banjo-playing, singing, dancing sort of being . . . "

Although minstrelsy was of black origin and born of black music, the black man did not participate in the minstrel show to any great extent until after the Civil War. Even then, because of nonchanging social attitudes of whites, the liberation of the black man from the public conception of his role was still a long way off. Consequently, these black performers utilized almost wholly the pattern of performances as it had been worked out by the white minstrel during the preceding 25 years, including blacking their faces.

The black man came into prominence in minstrelsy with the advent of the all-black minstrel company. The first successful group in this category was the Georgia Minstrels which was organized in 1865 by George B. Hicks. This company, with many changes of personnel, was recognized on three different occasions with a change in name. After the first reorganization, it was known until 1878 as Callender's Original Georgia Minstrels. It was then bought by Jack Haverly and became known as Haverly's European Minstrels. Finally in 1882 this company was reorganized as Callender's Consolidated Minstrels. Three European tours were undertaken in 1876, in 1880 and 1882 which made them world-famous"

The 1890's was a period in which black musicians, song and playwriters felt it incumbent upon them to use stereotype material which would conform to the predilections of the white man and his stereotype of the black man. However, the minstrel companies did provide a valuable training ground for a large number of black performers, who at this time could not have acquired this training in any other way.

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Ernest Hogan, black song writer of this period, wrote a song which catered to the prejudices and social attitudes of whites towards blacks. It was entitled "All Coons Look Alike to Me." While this song became very popular, its title became a "byword and an epithet of derision."[10] Hogan, later in life expressed regret in having written it.

In contrast to the kind of song written by Hogan, there were many other black songwriters of this period who used the minstrel merely as a vehicle to get their songs before the public.

The Negro spiritual, a plantation contemporary of the comic "jig-song and dance," was contrary to the stock conception of the black man's character and status, and therefore, was ignored by most whites. However, this indifference to the Negro spiritual was not confined to whites only. There are many blacks of this period, especially the educated, who attempted to ignore the spiritual as though it no longer existed. The institution of slavery had been so degrading to them and their ancestors, they preferred having nothing to do with anything that reminded them of the past. These blacks refused to sing spirituals, and subsequently these black folk songs were driven out of the church worship as the black church became more sophisticated.

It was not until college groups in the 1870's such as the Fisk Jubilee Singers of Nashville, Tennessee, and the Hampton Institute Choir of Hampton, Virginia, began to sing the spirituals on their concert tours did the spiritual gain acceptance by whites and blacks alike. Thus, some of the most characteristics products of black music were salvaged.

While the black musician was becoming a vital force in minstrelsy for the first time in the period following the Civil War, and college musical groups were helping to promote black music by including the spiritual in their concert repertoire, many black musicians were still very active in music in the European tradition as performers and composers. Not only were blacks continuing to go abroad for musical training, but some were receiving training in the conservatories of this country. Thus, they were exposed to the European music literature available during this period.

Among the black musicians who were significant as concert performers were Anna Madah and Emma Louise Hyers, sopranos; Wallace King, tenor; John Luca, bass-baritone; Nellie E. Brown, soprano; Flora Baston, soprano; Madame Marie Selika, soprano; Frederick P. White, pianist; William H. Bush, organist; M. Hamilton Hodges, baritone; Sidney Woodward, tenor; and Rachel Walker, soprano.

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Around the turn of the century, jazz began to evolve in the city of New Orleans. One of its major sources was the black brass bands of this city. New Orleans Jazz developed from the fusion of African and European musical elements and the creativity of black musicians. However, the first bands to gain employment in cities like Chicago and New York were all-white Dixieland jazz bands from New Orleans.

In another example of the imitators of New Orleans jazz being accepted in advance of the originators, who were black, occurred when the Original Dixieland Jass [sic] Band made the first all-jazz recording in 1917.

Paul Whiteman made jazz semi-respectable by giving a jazz concert in 1924 at Aeolian Hall, New York City, a stronghold of music in the European symphonic tradition. This was his major contribution to the development of an art form through which he gained access to fame through the imitation of the black man's music.

In the 1930's, white bands prospered by playing "swing," a form of jazz. Meanwhile, all-black bands played "one-nighters" with poor accommodations and low pay. Yet, many of the white bands of this period owed much of their success to black arrangers.

The exploitation of the black musician through his music did not end with the demise of "swing." Black musicians who became disenchanted with the commercialism of jazz as practiced by so many white bands of the late 1930's decided to strike out anew and evolved a jazz form in the early 1940's known as bebop. But as soon as the white musician became indoctrinated in this new idiom, history repeated itself. Once again the music of the black man was imitated and used as a vehicle of financial success by whites.

Many black jazz musicians, seeing no change in the attitudes of whites towards them as performers, decided to go to Europe and live. There they received the recognition which continually escaped them in this country.

While the black musician in jazz has suffered rejection in many ways, the art form itself had also been rejected by many people. However, presently, there appears to be a phenomena which as yet is somewhat enigmatic. As rhythm and blues and rock and roll gain ascendency in terms of money and general popularity, jazz, which is becoming almost a lost art form in many circles, is gaining in respectability. This "new" respectability of jazz is evidenced in many ways. More and more music educators are stressing jazz through the formation of stage bands in schools throughout the country. Also, the Young Artists groups are adding jazz ensembles to give concerts in the schools.

The black musician has been systematically denied employment in various kinds of orchestras in this country. The symphony orchestras, both major and minor, those orchestras employed by Broadway shows in New York City, and the orchestras operated by television networks have been reluctant to hire the black musician.

The overt exclusion of blacks by whites from these orchestras is only one facet of the problem. The social attitudes of whites have manifest themselves in many ways and have helped to keep the various orchstras almost lily-white.

Indirectly, blacks have been excluded from symphony orchestras because of the length of time needed to be trained as a symphony instrumentalist. A symphony instrumentalist must start training at an early age with an excellent teacher and a good instrument. Most blacks have not had this advantage because of social and economic reasons.

In addition, there are so few jobs available to black musicians in the concert field there is little incentive to study instruments like the violin, oboe or bassoon. Many blacks who are potentially able to play in symphony orchestras do not continue studying because they see no opportunities in this area.

When the black child attends a symphony concert, he has no figure to emulate. There is no black person on stage with whom he can identify. Consequently, he is not motivated to become a symphony musician.

Also, it is difficult for the black musician to get the necessary experience so that he can apply for the important jobs. A white musician while working his way up to an orchestra like the New York Philharmonic can make his way through the minor orchestras. Chances for the black musicians to do this are limited.

However, this situation has changed somewhat, but much too slowly. The Chicago Symphony Orchestra does maintain a first-rate training orchestra which has several blacks enrolled. In St. Louis, the Gateway Symphony Orchestra, a community orchestra, has ten black performers among its membership. Benjamin Steinberg, conductor of the Symphony of the New World in New York is not only training many black musicians but has already placed a few of his players in professional orchestras. In addition, black musicians perform with the orchestras at Tanglewood, Massachusetts, and Interlochen, Michigan.

Equally frustrating has been the lack of job opportunities for black conductors. Until recently, the door had been completely closed to those blacks who aspired to become conductors of concert orchestras in the United States.

Black conductors Dean Dixon, Everett Lee, and George Byrd were forced to go to Europe to pursue their careers. Each of these men have been able to secure permanent positions as conductors of orchestras on the continent.

There has been a breakthrough for the black conductor in the very recent past. Henry Lewis was appointed music director of the Newark-based New Jersey Symphony; George Frazier guest-conducted Beethoven's Ninth Symphony with the Detroit Symphony last season (1968-69); and Dr. Paul Freeman who was associate conductor of the Dallas Symphony Orchestra for two years and has been appointed conductor-in-residence with the Detroit Symphony Orchestra.

The black concert instrumentalist has not gained as much acceptance on the American concert stage as the black singer. This may be, as stated earlier, because so few blacks have been able to get an early start with competent instruction.

Although they are few in number, black concert instrumentalists have demonstrated exceptional ability. Among them are Andre Watts, pianist; Kermit Moore, cellist; Sanford Allen, violinist; Harold Jones, flutist; and Selwart Clarke, violist. Natalie Hinderas became the first black pianist to join the roster of a major management — Columbia Artists. Two other highly gifted pianists, Armenta Adams and Eugene Haynes, are now with major concert managements.

The black musician's experience as a member of the musician's union has been little different from the experience of blacks in the labor movement in general. The American Federation of Musicians which was organized in 1896, did not establish the pattern of Jim Crowism in the labor movement, but it appears to have done all that it possibly could to perpetuate this practice. As late as 1960, the AFM probably had more segregated locals throughout the United States than any union except the Railway Clerks." As was the practice with other unions, the AFM at first organized blacks into auxiliary locals. It was not until 1940 that the twelve remaining black auxiliaries were granted equal status with the white locals.

Since 1962, several black and white locals have merged. However, opposition against such a move is growing among black union members as they become aware of the experiences of those black locals that have merged. It has become apparent that integration by itself will not solve problems such as the employment of the black musician. As long as the minds of many white members are shackled with the same social attitudes that were prevalent in 1860, the merging of black and white locals will achieve little in the way of bet-

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tering the black musician's position. The fact remains that the American Federation of Musicians has done very little to help implement a fair hiring policy by employers of musicians. When it should be asserting itself in a role of leadership, is has remained silent. A change in policy is long overdue.

In tracing the role of the black musician in American society, two factors have remained constant regardless of the period or century being examined. The social attitudes of white America have caused whites to deter, if possible, the development of the black man's musical ability. On the other hand, the black musician has been able to make outstanding musical contributions under the most insuperable conditions.

FOOTNOTES

1. (Anon.) "18th Century Slave Advertisements," *Journal of Negro History*, I (April, 1916), p. 163.

2. *Ibid.*, pp. 179-80.

3. John Hope Franklin, *From Slavery to Freedom* (1956), p. 195.

4. The Free Negro in Virginia: 1619-1865 (1913), quoted in Frazier, *The Negro in the United States* (1957), p. 59.

5. *Ibid.*, p. 76.

6. Maud Cuney-Hare, *Negro Musicians and Their Music* (1936), p. 201.

7. Lionel de la Laurence, "The Chevalier de Saint-George," *Musical Quarterly*, V, 1 (January, 1919), Trans. by Frederick H. Martens, p. 81.

8. James Weldon Johnson, *Black Manhattan* (1930), p. 93.

9. Alain Locke, *The Negro and His Music* (1930), p. 93.

10. James Weldon Johnson, "Negro Songmakers," ed. Lindsay Patterson, *The Negro in Music and Art* (1969), p. 42.

11. Ray Marshall, *The Negro and Organized Labor* (1965), p. 103.

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BIBLIOGRAPHY

Books

Franklin, John Hope. *From Slavery to Freedom*. New York: Alfred A. Knopf, 1947.

Frazier, Edward Franklin. *The Negro in the United States*. New York: Macmillan Co., 1949.

Johnson, James Weldon. *Black Manhattan*. New York: Alfred A. Knopf, 1930.

Johnson, James Weldon. "Negro Songwriters." Edited by Lindsay Patterson, *The Negro in Music and Art*. New York: Publishers Company, Inc., 1969.

Locke, Alain. *The Negro and His Music*. Port Washington, New York: Kennikat Press, Inc., 1968.

Marshall, Ray. *The Negro and Organized Labor*. New York: John Wiley and Sons, Inc., 1965.

Periodicals

(Anon.) "Eighteenth Century Slave Advertisements." *Journal of Negro History* I (April, 1916) pp. 163-216.

Lawrence, Lionel de la. "The Chevalier de Saint-George." *Musical Quarterly* V, I (January, 1919) pp. 74-85.

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Selected Conditions Associated With the Mobility of Missouri Secondary Public School Music Teachers

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This article has been constructed to generally describe the findings and procedures which are reported in my study, "Selected Conditions Associated with the Mobility of Secondary Public School Music Educators in Missouri,"[1] completed in 1969 at the University of Missouri-Columbia. Each year a number of Missouri secondary music educators leave the profession or move to a new teaching location. This mobility and an interest in the status of music teachers in Missouri and the climate of music education stimulated the study.

Simply, the study was designed to investigate the occupational mobility of specified secondary public school music teachers in the state of Missouri during a five year period, the school years 1963-64 through 1967-68. The population of the study was established from names of teachers or supervisors of secondary music found in either, or both, the *Missouri Public School Directory* or *Missouri Music and Art Teachers List*.

In carrying out the major purposes of the study the information was organized into three main parts:

(1) A description of the mobility of secondary public school music teachers for the five year period, by school years, from 1932-64 through 1967-68.

(2) Reports of occupations of a representative number of former Missouri secondary music teachers and their value judgments as to reasons for entering and leaving the music teaching field in Missouri.

(3) Survey results pertaining to the conditions and climate of music throughout Missouri and personal opinions on teaching from responses of Missouri secondary public school educators during 1967-68.

For purposes of brevity, this digest integrates the results of the questionnaire study of former Missouri secondary public school music teachers with the results of a survey of Missouri music teachers active during the school year 1967-68.

The total number of music educators in each school year varied from the low of 908 in 1965-66, to the high of 941 in 1967-68.

The mean tenure, or average number of years served in the same system, was higher for women than for men in every year of the study. However, a trend toward an increase in tenure for men and a decrease among women appeared to be developing with 6.3

years for the women and 6.27 for the men in 1967-68.

The number of men teachers was less in 1967-68 than in any year of the study. A noticeable trend of decreasing numbers of men in the field was a finding with an accompanying increase in numbers of women entering the profession.

The total number of teachers with twenty or more years experience teaching in Missouri did not vary substantially from year to year; however, by examining the data by school size a distinct trend was observed. In 1963-64, only 52% of the men with 20 or more years of service were teaching in large systems. In each succeeding year the per cent increased to a high of 90% in 1967-68. The trend among women was similar from a low of 66.6% in 1963-64 to a high of 89.2% in 1967-68. The per cent of the total teaching force with twenty or more years consecutive service in the same school system in Missouri ranged from a high of 5.8% in 1965-66 to a low of 4.8% in the last year of the study.

The number of educators changing school positions but remaining in Missouri secondary music teaching (horizontal mobility) did not exceed a total of 57 moves in any year of the study. The per cent of men active in horizontal mobility diminished consistently throughout the study from 6.21% in 1963-64 to 5.59% in 1967-68. Women showed an irregular pattern. In no year did over 6.2% of the total teaching force engage in horizontal mobility.

In the hope of revealing patterns in the movements of these teachers, horizontal mobility was traced by a mapping procedure. Although over 83% of the changes found teachers moving to a larger school system or a higher school classification no clearly defined pattern of geographic movement was immediately evident.

The incidence of out-mobility (leaving the field) was observed among both men and women. The total population evidenced a complete turnover, number-wise, in slightly over five years; women, in less than five years and men in less than six years. Over 20% of the women left the field in every year of the study with an average for men of over 17% for all years researched.

In examining the tenure figures by each individual school it became apparent that the number of men first-year teachers comprised more than 20% of all men teaching in every year of the study, or a ratio of slightly over three men with more than one years' experience consecutively in the same school system to those beginning work in a new school. The number of women first-year teachers exceeded 25% in every year. A first-year teacher is here defined as a music educator whose consecutive experience in a reporting school district was not more than one year.

In all five years of the study the Southwest District ranked first or second in the number of first-year men music teachers and in four of the five years ranked first or second in the total number of first-year women educators. In the Southeast District the number of first-year men teachers was sufficient to rank it first or second in four of the five years of the study.

Thirty-one per cent of the changes in job locations were made during or at the close of the first year of employment in a school district. Of the changes in employment, 23% occured during the second year of tenure, 13% in the third year, 4% during or at the close of the fifth year of tenure.

The per cent of beginning teachers (no prior teaching experience in Missouri during the five-year period of the study) showed an increase in each year for men, from a low of 13.82% in 1963-64 to a high in 1967-68 of 18.26%. Figures on beginning teachers among women showed an increase to a high in 1966-67 of 26.74%, then a decrease of 22.4% in 1967-68. For the total teaching population of beginning teachers an index of 17.4% in 1964-65 increased to 19.28% in 1965-66, 20.62% in 1966-67, then decreased to 19.87% in 1967-68.

The most striking figures are those which indicate that approximately 5% more of the men in the teaching population in 1967-68, were beginning teachers than in 1964-65. Recalling the fact that the number of men teachers diminished throughout the study there is indication that if it is desirable that men remain in the field in numbers some further research is to be desired in the area of casual factors in separation.

Statistics and information available to the study tended to indicate that a high incidence of mobility had occurred among the secondary music educators of Missouri during the five-year period. An average of only 5% of the sample had been horizontally mobile while an average of nearly 19% had separated from Missouri public secondary school music teaching. There was a loss of 696 music educators from 1963-64 through 1966-67, a four-year period. Evidence that a lesser number of experienced men teachers were remaining in the profession was apparent from the increase in men apprentice teachers in each succeeding year. The increase in the per cent of women teachers, with a realization that more than one in five women left the field each year, would indicate cause for concern.

Data from questionnaire responses of former teachers (those who had left the field sometime during the five-year period of the study) and teachers of secondary music in Missouri during 1967-

68, provided further dimensions for the study. Responses from a group of former teachers totaled 219, or 133 men and 86 women. The teaching population for the school year 1967-68 included 575 men and 366 women for a total of 941 Missouri secondary public school music educators. Teachers included in the final questionnaire sample numbered 482 men and 278 women or 760 respondees, comprising 80.7% of the total population polled.

Age. The mean age for former teachers was 35.2 years for men and 36.5 for women with a mean for the population of 35.7 years. For active teachers responding the mean age was 36.1 for men, 37.8 for women, and 36.6 for the active teacher group.

Place of Birth. Of the former teachers over four in ten (42.7%) were born outside of Missouri. Over 50% of this sub-population were born in states immediately adjacent to Missouri and less than 6% were born in the far eastern or western states. In the active teacher group almost 36% of the total (men 38%, women 32%) were born outside of Missouri. Seven were born outside the continental United States.

Marital Status. Over 83% of the men former teachers and 84% of those men actively teaching were married. Nearly 79% of the women former teachers and 75% of the active group were married. The per cent of married respondees was 81% for both groups.

Children. The average number of children from reports of married former teachers was 1.55 for men, 1.65 for women, and 1.6 for the total population. Of the active teachers the average was 1.77 for men, 1.38 for women and 1.65 for the total group.

Vocations of Former Teacher Group. The vocation showing the greatest involvement of men at the time of the study was public school music teaching in states other than Missouri. Both men and women who remained in music teaching tended to locate in midwestern states. Iowa, Oklahoma, Illinois, Ohio, and Indiana led the list. Only New York, New Jersey, and California were listed as teaching locations outside the mid-western and southern states. The most popular profession of men who had left the field of music education was private business. The third most frequently mentioned was the armed forces. Among women, homemaking ranked first in occupations, elementary school music teaching ranked second with public school teaching in fields other than music as the third most mentioned. The majority of women who left secondary music teaching in Missouri who did not follow a homemaking career remained in the profession of education.

College or University Training. In the former teacher group 49% of the men and nearly 32% of the women had completed masters degrees. Of the total degrees listed by former teachers, 71% of the bachelors and 55.8% of the masters had been awarded by Missouri institutions. Information from the active teacher group indicated that 47% of the men had masters degrees and three men reported doctoral degrees. Of the women 21% had masters degrees. From the total active group, 37.5% had masters degrees. Three men and one woman had not completed a bachelors degree.

College Major and Minor Fields. Both former teachers and the active teacher group placed music high among their college disciplines with 93% of the former teachers and 96% of the active group indicating that music was a part of their major college program.

Teaching Background. Men former music educators, in listing their teaching experience, averaged 6.75 years in Missouri, while 44% had taught in other states for an average of 3.98 years. Over 20% of those men responding were teaching public school music in another state. Women former music teachers had taught in Missouri an average of 6.68 years while 38% of this number had taught in another state. Nearly 11% of the women were teaching music at the time they responded which resulted in a finding that more than 15% of the total former teacher popultaion responding were teaching music in states other than Missouri at the time of the study. Of the number who had separated during the study, 7% had returned to the Missouri secondary public school teaching profession. The active music educators in 1967-68 reported their teaching experience which averaged a mean for the entire group of 9.05 years teaching within the state. Men averaged 9.28 years and women 8.69 years. One finding was that although the average number of years of experience was progressively less for men in schools of lower enrollment and classification compared to those in larger systems, a similar trend did not develop among women. In small schools women averaged over 9 years experience which almost equalled the figure for the large schools. Women in medium-sized schools averaged less than 7 years. Among the men music educators active in 1967-68, 31% reported having taught in another state with an average for this sample of 4.37 years of out-state teaching experience. Over 26% of the women had taught in another state averaging 3.78 years of out-state experience. Over 30% of the teacher group responding had taught in other states for an average of 4.32 years. Teachers in small schools and in Class A schools had more experience, as an average, teaching outside Missouri than those in the large and AAA systems.

Teacher Assignments. Figures from teachers reporting their school assignments and pupil load during 1967-68 indicated that men, in general, were assigned smaller classes than women and that less than 7% of the men reported teaching classes or supervising a study hall in addition to their music duties. The majority of the men were involved in the instrumental field. Over 17% of the women taught music classes and at least one other subject field or supervised a study hall. Music assignments were generally in the field of vocal or general music. The number of students assigned to women in public school secondary music was over twice the number assigned to men. It was not unusual for women in smaller schools to teach over 300 students a week.

Most-Liked Aspects of Music Teaching. Certain items of the questionnaire were designed as check list responses to selected questions. The former teacher group checked "Relationships with children," "Feeling derived of giving service to society," and "Community-school music performance," as the first three choices. Under items labeled "Other" nearly all replies could be classified under service to society and personal satisfaction categories. The first three choices for teachers active in 1967-68 were "Relationships with children," "Professional associations," and "Community service through performance." Teachers in large schools mentioned professional associations more often than those in other medium or small systems.

Reasons for Entering the Music Teaching Profession. Former teachers indicated "love of music — interest in music," so often as items entered in the "Other" category that only "a desire to be of service to society" was checked more frequently. The service motive appeared quite strong in responses by former teachers. Encouragement from college instructors was ranked high as a contributing influence. Nearly 14% of the women indicated teaching was an interlude to a homemaking career. It was significant that only 2% of the men declared that they had entered the field as an interim vocation. Over 15% of the men indicated that members of their family were teachers and had influenced their decision.

Checked most frequently by the active teacher group was "a desire to be of service to society." Next were "love of music" and "encouragement from college teachers." A "love of music" category was created after examining the numerous comments listed under "Other." Only 29 women indicated that they had entered the field as an interlude to a homemaking career. It is interesting to note that all women who reported entering the field as an interlude to

a homemaking career were located in AAA and large school systems.

First Choice of a Vocation. Over 90% of the men former teachers and 92% of the women declared that music teaching was their first choice among professions. In reports from active music educators, 82% of the men and nearly 87% of the women indicated that music teaching was their first choice as a career.

Most Disliked Aspects of Teaching. Men former teachers checked "salary" most often among dislikes with women designating it second to "poor facilities." The number of women former teachers who indicated "classes too large" placed it third. Men did not appear to be as concerned with the problem of large classes and only seventeen listed it among their dislikes. "Administrators' attitudes" ranked second as a dislike among men and fourth among women. "Poor physical facilities" and "too many extra-class activities" ranked third and fourth among the dislikes of men former teachers. A number of individuals felt administrators took their work for granted and twelve persons mentioned specific dislikes for the Missouri State High School Activities Association's policies. Men showed a much greater concern with tenure than did women.

Among teachers active in 1967-68, the six most mentioned dislikes included four in the area of school facilities: "inadequate budget," "lack of adequate school-owned instruments," "lack of adequate physical facilities," "too many extra-class activities," "lack of adequate method books," and "marching band." It is significant that "little student interest" was among the items least checked. Women in the AAA and large school systems were the only group to check "inadequate salary" in numbers sufficient for it to be included among the first five. "Marching band" was the fifth most disliked item among men in AAA and large school systems.

Reasons for Leaving the Music Teaching Profession in Missouri. In this category men former teachers most frequently checked "salary considerations" and "better working conditions in another state." Leaving "to assume home responsibilities" was the leading reason given by women. Among those who indicated the one most controlling factor influencing their decision, "monetary considerations" was ranked first by men. "Administrators' attitudes," "military service," and "lack of opportunities for advancement," followed in order. Women listed "family responsibilities" as the most influential factor followed by a "desire to teach in another field" and "better working conditions in another state." Only 6% of the women indicated salary was the most important factor in their decision.

Reasons for Considering Leaving Missouri Music Teaching. **Over 36% of the music educators active in 1967-68, indicated that they were considered leaving the vocation (the per cent for both men and women was 36). Although the greatest number of teachers considering leaving the field were in the large schools only 32% of this group were considering changing, which was less than in the medium (43%) or small (42%) systems. Reasons given in order of frequency by men were: "salary considerations," "opportunities for advancement limited within the field," "music teaching requires too much time outside regular school hours," and "better working conditions in another state." The four most frequently given by women were: "to assume home responsibilities," "music teaching requires too much time outside of regular school hours," "salary considerations," and "retiring from the teaching profession within five years."**

Highest Salary. The former teachers who responded reported their highest salary as music educators in Missouri and the salary in their present employment by means of a check list with categories ranging from "below $3,000" through "$12,000 and up." The median salary while teaching in Missouri for both men and women was in the $5,000 to $5,999 range. After separation two former teachers reported salaries in excess of $30,000 annually with eleven others checking the "$12,000 and up" category. The median income for men changed to $8,000 to $8,999. For women the median showed no change. A number of women as homemakers were included in the computation and by removing them from the evaluation the median for women changed to $6,000 to $6,999. For teachers active in 1967-68, the median was in the $6,000 to $6,999 range. Over 31% of the men reported their salary was in the $7,000 to $7,999 category while 37% of the women indicated their salary was between $6,000 and $6,999.

Subsidiary Income. Over 50% of the men and 54% of the women in the former teacher group reported additional income. Of forty who identified their additional source of revenue, 67% included activities related to the field of music. In the active teacher group 58% of the men received remuneration from other sources to supplement their teaching salary. Among the women nearly 23% reported subsidiary income. Teachers in large school systems most often listed outside income. In reports of the per cent of total income obtained through outside employment the average was 14% among those reporting. The most popular sources of extra income were those relating to music, such as private lessons, church music, and professional engagements.

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Membership in Professional Organizations. Sixty-five per cent of the former teachers reporting were members of a professional organization associated with their vocation in 1968. Over 80% of the former teachers had been members of the Missouri Music Educators Association and over 70% indicated they had been members of the Music Educators National Conference. Membership in the MMEA was reported by 66% of the men and 55% of the women music teachers active in 1968. Over 59% of the men and 48% of the women declared they had been members of the MENC.

Problem Areas in Missouri Music Education. Numerous comments from both sample groups resulted in a lengthy listing of problem areas in music education in Missouri. A simple enumeration without comment is given here with a recommendation that the reader consult the original dissertation for a more complete treatment. Salary was most often mentioned followed by lack of facilities, lack of instruments and/or music texts and materials, inadequate budgets, time requirements for music outside of class, poor scheduling practices, insufficient credit for music courses, lack of understanding as to the purposes of music education by administrators and the public, poor elementary music programs, lack of sequential curriculum, music festival organization, Missouri State Activities Association policies and procedures in music education, marching bands, insufficient orchestra programs, and a need expressed for courses in the Allied Arts, music appreciation, and theory.

Evaluation of the Music Program in Missouri Based on Experience in other States. Music educators in 1968 included 65 men and 42 women who reported experience teaching in other states in addition to Missouri. Over 31% of the men and 22% of the women felt the Missouri program was superior. Nearly 55% of the men and 77% of the women described the program in Missouri as inferior. The majority of these educators had been employed in the mid-western area. Both in and out-mobility involved a large number of states adjacent to Missouri. Iowa, Kansas, Illinois, Oklahoma, and Texas were given particular credit for their music programs. It should be noted, however, that only twenty-two states were represented including only three in the far west and one from the northeast.

Summary. From the comments of Missouri music educators and former teachers there appears to be a need for development of clearer statements of the purposes and processes of public school music in Missouri. A possible reexamination of the state-wide policies of the Missouri State Activities Assocation as they apply to music education might be desirable. The need for enlightened leadership in solving the problems of the profession is apparent. Whether the Missouri State High School Activities Association is the body to provide this leadership was a question posed often in responses of educators. The loss of many music instructors from the profession has been documented and suggestions for improvement of the climate of music education provided by those involved. The dissertation (from which this article was summarized) is multi-dimensional and it is hoped it will prove to be a useful tool in problem-solving. Particular appreciation is extended to the music educators of Missouri and the former teachers who provided the data necessary to complete this research.

FOOTNOTES

1. Bodanske, Wm. "Selected Conditions Associated with Mobility of Secondary School Music Educators in Missouri." University Microfilms #70-6561 Ed. D. dissertation. University of Missouri, 1969.

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A Selected List of Art Songs in French

Eugene C. Cramer
Park College

A NOTE TO USERS

As a repertoire source, the following list of songs which limits itself to songs in French is intended to complement and to some extent supplement the related portions of the two standard works in this area — *Music for Voices* by Sergius Kagen and *The Singer's Repertoire* by Berton Coffin.

The guidelines for the formation of this list were first, that the song have a general appeal which is both immediate and lasting; second, that the song is useable both as a studio or teaching piece and as a repertoire piece; third, that the technical demands of the song both linguistical and musical would present a challenge to but yet not discourage the serious young singer; and finally that the song be available in a readily accessible modern edition.

The basic listing is alphabetical by composer. The songs of each composer are listed alphabetically by title with the poet given in parentheses next to the title. Each appearance of the title is then listed according to compass from the highest to the lowest. Each main entry contains the following information in this order: first, the siglum for the volume in which the song is found (see "Annotated Guide to the Publications Consulted"); second, the page of the song in that volume; third, the compass of the song using C-B for the octave below middle c, c-b for the octave above middle c, and c^1-b^1 for the next octave above middle c, etc.; fourth, the tempo indication of the song; and fifth, information concerning the English translation of the text.

In addition, several supplemental indices or guides are provided. There is an index of the songs by title, an index of the poets represented, a guide to the compass of each song, a guide to the cycles represented either complete or in part, and a general guide to the tempos of the songs in the list. It is hoped that these indices and guides will be useful in program building. Attention should also be called to the annotated guide to the publications consulted which precedes the listing itself. Note that each annotation is followed by a list of the songs from that publication included in the basic list.

It is the hope of the author-compiler that this list will be valuable and welcome teaching aid for anyone involved in the vocal art.

ANNOTATED GUIDE TO THE PUBLICATIONS CONSULTED

Siglum (for reference purposes)

Barber Coll Songs — Barber, Samuel. *Collected Songs*. New York: G. Schirmer, Inc.

A collection of the twenty-eight songs Samuel Barber had written before 1955 including the *Hermit Songs*. The volume is available for high and low voice. A literal translation of the songs not in English is included.
1, 2, 3.

Les nuits d'été — Berlioz, (Hector). *Les nuits d'été, a cycle of six songs for voice and piano*. New York: International Music Company.

A cycle of six songs which can be performed separately and which is available for high and low voice. The English translations by Waldo Lyman are literal and are presented in a double column (one French, one English) line by line format.
4, 5, 6, 7, 8, 9

Britten Folk Songs — Britten, Benjamin. *Folk Song Arrangements, Volume 2, France*. London: Boosey and Hawkes Limited.

A specialized collection of eight *chansons populaires* with "modern" accompaniments by Britten. The volume is available for high and medium voice. English translations by Iris Rogers suitable for singing are included and are placed under the original text throughout.
12, 13, 14, 15.

Fauré Album I — Fauré, Gabriel. *Album of Twenty Songs, Vol. I*. New York: Edward B. Marks Music Corporation.

A collection of twenty songs for Mezzo-Soprano or Baritone. No English translations are included.
43, 52, 54

Fauré Album II — Fauré, Gabriel. *Album of Twenty Songs, Vol. II*. New York: Edward B. Marks Music Corporation.

A specialized collection of twenty songs for Soprano or Tenor. No English translations are included.
42, 44, 45, 46, 47, 49, 50, 55, 56, 57, 58, 59

Art Songs for School and Studio — Glenn, Mabelle and Alfred Spouse, eds. *Art Songs for School and Studio (First Year)*. Bryn Mawr, Pennsylvania: Oliver Ditson Company / Theodore Presser Company.

A general collection of twenty-five songs (including arrangements of folk songs) by seventeen composers. The collection is available for medium high and medium low voice. The collection contains a general statement on the contents of the volume, a statement on teaching procedure, an outline of singing theory, a statement on diction and notes on the songs. The general tone of the collection is didactic. English translations for singing are included and are presented ABOVE the original text.
67

French Art Songs — Glenn, Mabelle and Bernard U. Taylor, eds. *French Art Songs for School and Studio*. Bryn Mawr, Pennsylvania: Oliver Ditson Company / Theodore Presser Company.

A specialized collection of twenty French songs by sixteen composers.

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The volume is available for medium high and medium low voice. The volume contains a general statement concerning the contents, a guide to learning songs, a guide to French pronunciation and notes on the songs included in the volume. The English translations are suitable for singing and are placed ABOVE the original French text throughout.
38, 68, 71.

Modern French Songs

Hale, Philip. *Modern French Songs. Vol. I Bemberg to Franck.* Bryn Mawr, Pennsylvania: Oliver Ditson Company / Theodore Presser Company.

A specialized collection of thirty French songs by seventeen composers available for high and low voice. The volume contains a short history of French song as well as short biographical sketches of the composers represented. The English translations are suitable for singing and are placed ABOVE the original French text throughout.
9, 11, 41, 46, 56, 60, 62.

The Art Song

Howland, Alice and Poldi Zeitlin, eds. *The Art Song.* Music for Millions Series, Volume 25. New York: Consolidated Music Publishers, Inc.

A general collection of fifty-five songs from all the major repertoires available only for medium voice but useable also for high voice. The English translations for those songs not originally in English are literal and are presented in a double column format.
4, 16, 29, 32, 35.

Chausson (Kagen)

Kagen, Sergius, ed. *Chausson, 20 Songs for Voice and Piano.* New York: International Music Company.

A specialized collection available for high and low voice. The English translations by Edith Braun are literal and are presented in a double column line by line format.
19, 20, 21, 22, 23, 24, 25, 26, 27, 28.

Debussy (Kagen)

Kagen, Sergius, ed. *Debussy, 43 Songs for Voice and Piano.* New York: International Music Company.

A specialized collection consisting primarily of song cycles available for high and medium or low voice. The English translations are literal and are presented in a double column line by line format.
29, 30, 31, 32, 33, 34.

Duparc I (Kagen)

Kagen, Sergius, ed. *Duparc, 11 Songs for Voice and Piano.* New York: International Music Company.

A specialized collection available only for high voice. The English translations by Edith Braun are literal and are presented in a double column line by line format.
36, 37, 38, 39, 40, 41.

Duparc II (Kagen)

Kagen, Sergius, ed. *Duparc, 12 Songs for Voice and Piano.* New York: International Music Company.

A specialized collection available for medium and low voice. The English translations by Edith Braun are literal and are presented in a double column line by line format.
36, 37, 38, 39, 40, 41.

Fauré (Kagen)

Kagen, Sergius, ed. *Fauré, 30 Songs for Voice and Piano.* New York: International Music Company.

A specialized collection available for high, medium, and low voice. The English translations by Edith Braun and Waldo Lyman are literal and are presented in a double column line by line format.
42, 43, 44, 46, 48, 50, 51, 52, 53, 56.

Hahn (Kagen)

Kagen, Sergius, ed. *Hahn, 12 Songs for Voice and Piano.* New York: International Music Company.

A specialized collection available for high and low voice. The English translations are literal and are presented in double column line by line format.

68, 69, 70, 71, 72

40 French Songs

Kagen, Sergius, ed. *40 French Songs, 2 Vols.* New York: International Music Company.

Available for high, medium and low voice, this is a specialized collection of songs in French which emphasizes the contributions of what might be called the "minor" composers of French song. The English translations are literal and are presented in a double column line by line format.

I 4, 9, 18, 63, 64, 65, 66, 69, 75, 80, 106
II 10, 16, 17, 61, 68, 71, 73, 74, 75, 78

Liszt Twelve Songs

Liszt, Franz. *Twelve Songs with Piano Accompaniment.* New York: G. Schirmer, Inc.

A specialized collection of songs in German and French by Liszt available for high and low voice. English translations for singing are included and are presented under the original text.

75, 76

Airs Chantés

Poulenc, Francis. *Airs chantés pour soprano d'après des poèmes de Jean Moréas.* Paris: Rouart-Lerolle & Cie. / Editions Salabert.

A cycle of four songs which can be performed separately available only for high voice. Even though the title indicates a soprano voice, tenors should not feel excluded. In addition to the original French, translations suitable for singing are given for both English and German and are presented under the original.

84, 85, 86, 87

Tel jour, telle nuit

Poulenc, Francis. *Tel jour, telle nuit, neuf mélodies sur des poèmes de Paul Éluard.* Paris: Durand & Cie.

A cycle of nine songs which can be performed separately available only for high voice (either male or female). No translations are given.

88, 89, 90, 91, 92, 93, 94, 95, 96

Ravel Douze Chants

Ravel, Maurice. *Douze Chants avec accompt de piano.* Paris: Durand & Cie.

A specialized collection of twelve songs by Ravel available for high and medium voice. English translations suitable for singing are provided and are placed under the original French text.

97, 98, 100, 101, 102, 103

Riegger Bergerettes

Riegger, Wallingford. *Two Bergerettes.* New York: Peer International Corporation.

Two French bergerettes to which Riegger has added an accompaniment. No English translations are included. The songs are available only in one key (medium).

104, 105

Ant. Mod. Fr. Song

Spicker, Max, ed. *Anthology of Modern French Song.* New York: G. Schirmer, Inc.

Available for high or low voice this is a specialized collection of thirty-nine songs by "modern" French composers. The English translations by Henry G. Chapman and others are designed for singing and the English text is placed under the French text throughout.

11, 16, 21, 26, 29, 32, 35, 36, 55, 56, 62, 80, 81, 83

Great Art Songs

Taylor, Bernard, ed. *Great Art Songs of Three Centuries.* New York: G. Schirmer, Inc.

Available for high and low voice, this is a general collection of fifty-nine songs by twenty-nine composers covering the Italian, German, French, Spanish and Russian repertoires from the 17th through the 20th centuries. The English translations by a variety of persons are suitable for singing and are placed under the original text throughout. (Only the English text is given for songs originally in Russian.)

4, 26, 33, 44, 52, 61, 69

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Weckerlin Bergerettes — Weckerlin, J. B., ed. *Bergerettes, (Pastoral Ditties) Twenty Romances and Songs of the Eighteenth Century*. New York: G. Schirmer, Inc.

A specialized collection of twenty fairly simple folk-like songs, mostly anonymous, from the 18th century. The English translations by Sigmund Spaeth are designed for singing and are presented under the original text throughout.

79, 82, 107, 108, 109, 110, 111, 112.

Seven Cent. Solo Song — Woodside, James, ed. *Seven Centuries of Solo Song*. 6 vols. Boston: Boston Music Company.

Available for high and low voice this is a general collection of sixty-two songs from all repertoires covering the 13th to the 20th century. The collection includes an extensive monograph on the *Evolution of the Art Song* which is continuous through the six volumes. English translations suitable for singing are provided and are placed ABOVE the original text.

III 77.
VI 29, 37.

Fifty Art Songs — *Fifty Art Songs from the Modern Repertoire*. New York: G. Schirmer, Inc.

A general collection of songs in English, French, Italian, German and Spanish by thirty-eight composers all of whom were composing in the early years of the 20th century. English translations for singing are included and are presented under the original text.

44, 47, 68, 73, 99.

Sel. French Art Songs — *Selected French Art Songs*. New York: Marks Music Corporation.

Available in only one range (high or medium) this is a specialized collection of thirteen songs. The English translations by Olga Paul are suitable for singing and are given under the original French text throughout.

32, 61, 71, 113.

BARBER, SAMUEL (1910-   )

1. Le Clocher chante (Rilke)
    a. Barber Coll. Songs, high, p. 67-70; d-b flat', non troppo allegro, literal Eng. trans. p. 58.
    b. Barber Coll. Songs, low, p. 67-70, c-a flat', non troppo allegro, literal Eng. trans. p. 58.
2. Puisque tout passe (Rilke)
    a. Barber Coll. Songs, high, p. 59-60; f-g'; moderato, literal Eng trans. p. 58.
    b. Barber Coll. Songs, low, p. 59-60; d-e'; moderato; literal Eng trans. p. 58.
3. Tombeau dans un parc (Rilke)
    a. Barber Coll. Songs, high, p. 65-66, d-g', lento e sereno, literal Eng trans. p. 58.
    b. Barber Coll. Songs, low, p. 65-66; B-e', lento e sereno, literal Eng trans. p. 58.

BERLIOZ, HECTOR (1803-1869)

4. L'Absence (Gautier)
    a. Les nuits d'été, high, p. 23-25; c sharp-f sharp', adagio; literal Eng. trans. p. 3.
    b. 40 French Songs I, high, p. 7-10; c sharp-f sharp'; adagio, literal Eng. trans. p. IV.
    c. Great Art Songs, high, p. 150-153; c sharp-f sharp', adagio, Eng trans. for singing underlaid.
    d. The Art Song, p. 100-103; B-e'; adagio; literal Eng. trans. p. 12.
    e. 40 French Songs I, medium, p. 7-10; B-e'; adagio; literal Eng. trans p. IV.
    f. Great Art Songs, low, p. 150-153; B flat-e flat', adagio, Eng. trans for singing underlaid.
    g. Les nuits d'été, low, p. 23-25; B flat-e flat', adagio, literal Eng trans. p. 3.
    h. 40 French Songs I, low, p. 7-9, B flat-e flat', adagio, literal Eng trans. p. IV.

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5 **Au cimetière (Clair de lune) (Gauthier)**
a **Les nuits d'été, high, p. 26-32; e-g'; andantino non troppo lento; literal Eng. trans. p. 3.**
b **Les nuits d'été, low, p. 26-32; c-e flat'; andantino non troppo lento; literal Eng. trans. p. 3.**
6 **L'île inconnue (Gautier)**
a **Les nuits d'été, high, p. 33-40; d flat-g'; allegro spiritoso; literal Eng. trans. p. 3**
b **Les nuits d'été, low, p. 33-40; B flat-e'; allegro spiritoso; literal Eng. trans. p. 3.**
7 **Le spectre de la rose (Gautier)**
a **Les nuits d'été, high, p. 9-15; c-a flat'; adagio un poco lento e dolce assai; literal Eng. trans. p. 2.**
b **Les nuits d'été, low, p. 9-15; A-f'; adagio un poco lento e dolce assai; literal Eng. trans. p. 2.**
8 **Sur les lagunes (Lamento) (Gautier)**
a **Les nuits d'été, high, p. 16-22; (G flat) d flat-a flat'; andantino; literal Eng. trans. p. 2**
b **Les nuits d'été, low, p. 16-22; (F flat) C flat-g flat'; andantino; literal Eng. trans. p. 2.**
9 **Villanelle (Gautier).**
a **Les nuits d'été, high, p. 4-8; e-f sharp'; allegretto; literal Eng. trans. p. 2**
b **40 French Songs I, high, p. 11-15; e-f sharp'; allegretto; literal Eng. trans. p. IV.**
c **Modern French Songs, high, p. 7-12; e-f sharp'; allegretto; Eng. trans. for singing underlaid.**
d **Les nuits d'été, low, p. 4-8; c-d'; allegretto; literal Eng. trans. p. 2.**
e **Modern French Songs, low, p. 7-12, c-d'; allegretto; Eng. trans. for singing underlaid**
f **40 French Songs I, medium, p. 11-15, c-d', allegretto; literal Eng. trans. p. IV.**
g **40 French Songs I, low, p. 10-14, c-d', allegretto, literal Eng. trans. p. IV**

BIZET, GEORGES (1838-1875)
10 **Chanson d'avril (Bouilhet)**
a **40 French Songs II, high, p. 6-11, e-g', andantino espressivo, literal Eng. trans. p. 6**
b **40 French Songs II, medium, p. 6-11, d-f', andantino espressivo; literal Eng. trans. p. IV**
11 **Vieille chanson (Millevoye)**
a **Modern French Songs, high, p. 13-18, e flat-a', andantino; Eng. trans. for singing underlaid.**
b **Ant. Mod. Fr. Song, high, p. 66-71, e flat-a', andantino, Eng. trans. for singing underlaid.**
c **Ant. Mod. Fr. Song, low, p. 66-71, c-f sharp', andantino; Eng. trans. for singing underlaid.**
d **Modern French Songs, low, p. 13-18, B flat-e', andantino, Eng. trans. for singing underlaid.**

BRITTEN, BENJAMIN (1913-)
12 **La belle est au jardin d'amour (anonymous)**
a **Britten Folk Songs, high, p. 24-26, f-d', andantino, Eng. trans. for singing underlaid.**
b **Britten Folk Songs, medium, p. 24-26, f-d', andantino; Eng. trans. for singing underlaid.**
13 **Il est quelqu'un sur terre (anonymous)**
a **Britten Folk Songs, high, p. 27-31, f-f', grave, Eng. trans. for singing underlaid.**
b **Britten Folk Songs, medium, p. 27-31; d-d', grave, Eng. trans. for singing underlaid.**
14 **La noël passée (anonymous)**
a **Britten Folk Songs, high, p. 4-9, f-g', allegretto con molto ritmo; Eng. trans. for singing underlaid.**
b **Britten Folk Songs, medium, p. 4-9, d-e', allegretto con molto ritmo, Eng. trans. for singing underlaid.**
15 **Le roi s'en va-t'en chasse (anonymous)**
a **Britten Folk Songs, high, p. 20-23, e flat-e flat', vivace; Eng. trans. for singing underlaid.**
b **Britten Folk Songs, medium, p. 20-23, e flat-e flat', vivace, Eng. trans. for singing underlaid.**

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BRUNEAU, ALFRED (1857-1934)

16. **L'heureux vagabond (Mendes)**
    - a. **40 French Songs II, high,** p. 24-27, e flat-g', largament, literal Eng. trans. p. 24.
    - b. **Ant. Mod. Fr. Song, high,** p. 20-23, e flat-g', largamente, Eng. trans. for singing underlaid.
    - c. **40 French Songs II, medium,** p. 23-26, d flat-f'; largament, literal Eng. trans. p. V.
    - d. **The Art Song,** p. 124-126, d flat-f', largament; literal Eng. trans. p. 14.
    - e. **Ant. Mod. Fr. Song, low,** p. 20-23, B flat-d', largamente, Eng. trans. for singing underlaid.
    - f. **40 French Songs II, low,** p. 17-20, B flat-d', largament, literal Eng. trans. p. V.
17. **Le sabot de frêne (Mendès)**
    - a. **40 French Songs II, high,** p. 18-23, d-e', gaiment, literal Eng. trans. p. 18.
    - b. **40 French Songs II, medium,** p. 18-22, B flat-c'; gaiment, literal Eng. trans. p. V.
    - c. **40 French Songs II, low,** p. 12-16, B-flat-c'; gaiment, literal Eng. trans. p. IV.

CHABRIER, EMMANUEL (1841-1894)

18. **Villanelle des petits canards (Gérard)**
    - a. **40 French Songs I, high,** p. 16-20, c sharp-f sharp', allegretto con moto; **literal Eng.** trans. p. V.
    - b. **40 French Songs I, medium,** p. 16-20, c sharp-f sharp', allegretto con moto; **literal Eng.** trans. p. V.
    - c. **40 French Songs I, low,** p. 15-19, B-e', allegretto con moto, literal Eng. trans. p. V.

CHAUSSON, ERNST (1855-1899)

19. **Amour d'Antan (Bouchor)**
    - a. **Chausson (Kagen), high,** p. 8-11, d-f sharp', pas trop lent, literal Eng. trans. p. IV.
    - b. **Chausson (Kagen), low,** p. 8-11, B flat-d', pas trop lent, literal Eng. trans. p. IV.
20. **Chanson d'Ophelia (Bouchor)**
    - a. **Chausson (Kagen), high,** p. 48-49, c-e', lent, literal Eng. trans. p. VI.
    - b. **Chausson (Kagen), low,** p. 47-48, B flat-d', lent, literal Eng. trans. p. VI.
21. **Le charme (Silvestre)**
    - a. **Chausson (Kagen), high,** p. 12-13, d-g'; moderato con moto, literal Eng. trans. p. IV.
    - b. **Ant. Mod. Fr. Song, high,** p. 90-91, d-g'; moderato con moto; Eng. trans. for singing underlaid.
    - c. **Chausson (Kagen), low,** p. 12-13, B flat-e flat'; moderato con moto, literal Eng. trans. p. IV.
    - d. **Ant. Mod. Fr. Song, low,** p. 90-91, B flat-e flat'; moderato con moto, Eng. trans. for singing underlaid.
22. **Le colibri (Leconte de Lisle)**
    - a. **Chausson (Kagen), high,** p. 44-47, f-g flat', pas vite, literal Eng. trans. p. VI.
    - b. **Chausson (Kagen), low,** p. 43-46, d sharp-e', pas vite, literal Eng. trans. p. VI.
23. **Les heures (Mauclair)**
    - a. **Chausson (Kagen), high,** p. 41-43, e-e', lent et résigné, literal Eng. trans. p. VI.
    - b. **Chausson (Kagen), low,** p. 40-42, d-d', lent et résigné, literal Eng. trans. p. VI.
24. **Nanny (Leconte de Lisle)**
    - a. **Chausson (Kagen), high,** p. 5-7, B-g', lentement, literal Eng. trans. p. IV.
    - b. **Chausson (Kagen), low,** p. 5-7, A-f', lentement, literal Eng. trans. p. IV.
25. **Nocturne (Bouchor)**
    - a. **Chausson (Kagen), high,** p. 1-4, e-g sharp', modéré, literal Eng. trans. p. IV.
    - b. **Chausson (Kagen), low,** p. 1-4, c-e', modéré; literal Eng. trans. p. IV.

- 26 Les papillons (Gautier)
  - a Chausson (Kagen), high, p 20-22; c-f'; vif; literal Eng trans p V
  - b Great Art Songs, high, p 157-160; c-f'; vivace; Eng trans for singing underlaid
  - c Ant Mod Fr Song, high, p 72-75; c-f'; vivo; Eng trans for singing underlaid
  - d Chausson (Kagen), low, p 19-22; B flat-e flat'; vif; literal Eng trans p V
  - e Great Art Songs, low, p 157-160; B flat-e flat'; vivace; Eng trans for singing underlaid
  - f Ant Mod Fr Song, low, p 72-75; B flat- e flat'; vivo; Eng trans for singing underlaid
- 27 Printemps triste (Bouchor)
  - a Chausson (Kagen), high, p 14-19; c-g'; très lent; literal Eng trans p. IV
  - b Chausson (Kagen), low, p 14-18; A-e'; très lent; literal Eng trans p. IV
- 28 Sérénade italienne (Bourget)
  - a Chausson (Kagen), high, p 36-40; c-e'; moderato; literal Eng trans p. VI
  - b Chausson (Kagen), low, p 35-39; B flat-d'; moderato; literal Eng trans p VI

DEBUSSY, CLAUDE (1862-1918)

- 29 Beau soir (Bourget)
  - a Debussy (Kagen), high, p 5-7; c-f sharp'; andante ma non troppo; literal Eng trans. p I.
  - b Seven Cent. Solo Song, Vol. VI, high, p 22-24; c-f sharp'; andante ma non troppo; Eng trans. for singing above French text.
  - c Ant Mod Fr Song, high, p 3-5; c-f sharp'; andante ma non troppo; Eng trans for singing underlaid.
  - d Seven Cent Solo Song, Vol VI, low, p 22-24; B flat-e'; andante ma non troppo; Eng trans. for singing above French text.
  - e Ant. Mod Fr Song, low, p 3-5; B flat-e'; andante ma non troppo; Eng trans for singing underlaid.
  - f The Art Song, p. 127-129; A flat-d'; andante ma non troppo; literal Eng trans p 14.
  - g Debussy (Kagen), low and medium, p 5-7; A flat-d'; andante ma non troppo; literal Eng trans p I
- 30 Fantoches (Verlaine)
  - a Debussy (Kagen), high, p 124-127; d-a'; allegretto scherzando; literal Eng trans p VII
  - b Debussy (Kagen), low and medium, p 124-127; c-g'; allegretto scherzando; literal Eng trans p VII
- 31 Green (Verlaine)
  - a Debussy (Kagen), high, p 84-87; C flat-a flat'; joyeusement animé; literal Eng trans p V
  - b Debussy (Kagen), low and medium, p 84-87; A flat-f'; joyeusement animé; literal Eng trans p V
- 32 Mandoline (Verlaine)
  - a Sel Fr Art Songs, high or medium, p 6-9; c-g'; allegretto; Eng trans for singing underlaid
  - b Debussy (Kagen), high, p 11-14; c-g'; allegretto; literal Eng trans p. I
  - c Ant Mod Fr Song, high, p 6-9; c-g'; allegretto; Eng trans for singing underlaid
  - d Ant Mod Fr Song, low, p 6-9; A-e'; allegretto; Eng trans for singing underlaid
  - e Debussy (Kagen), low and medium, p 11-14; A flat-e flat'; allegret- literal Eng trans p. I
  - f The Art Song, p 130-133; A flat-e flat'; allegretto; literal Eng trans p 15
- 33 Nuit d'étoiles (Banville)
  - a Debussy (Kagen), high, p 1-4; d-g'; allegro; literal Eng trans p I
  - b Great Art Songs, high, p 182-185; d-g'; allegro; Eng trans for singing underlaid
  - c Debussy (Kagen), low and medium, p 1-4; c-f'; allegro; literal Eng trans p I
  - d Great Art Songs, low, p 182-185; c-f'; allegro; Eng trans for singing underlaid

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34. Spleen (Verlaine)
    a. Debussy (Kagen), high, p. 88-90, d flat-b flat', lent, literal Eng trans. p. V.
    b. Debussy (Kagen), low and medium, p. 88-90, A flat-f', lent; literal Eng. trans. p. V.

DELIBES, LÉO (1836-1891)

35. Bonjour, Suzon' (Musset)
    a. Ant. Mod. Fr. Song, high, p. 80-85; c-f', allegretto vivo; Eng. trans for singing underlaid
    b. Ant. Mod. Fr. Song, low, p. 80-85; B flat-e flat', allegretto vivo, Eng. trans. for singing underlaid
    c. The Art Song, p. 104-108; B flat-e flat', allegretto vivo, literal Eng trans. p. 12.

DUPARC, HENRI (1848-1933)

36. Chanson triste (Lahor)
    a. Duparc I (Kagen), high, p. 43-47, d flat-a', lent, literal Eng. trans. p. 43.
    b. Ant. Mod. Fr. Song, high, p. 38-43, d flat-a', lento affettuoso, Eng trans. for singing underlaid.
    c. Duparc II (Kagen), medium, p. 43-38, B flat- f sharp'; lent, literal Eng. trans. p. 43.
    d. Ant. Mod. Fr. Song, low, p. 38-43; B flat-f sharp'; lento affettuoso; Eng. trans. for singing underlaid
    e. Duparc II (Kagen), low, p. 42-46; a flat-e'; lent, literal Eng. trans. p. 42.
37. Lamento (Gautier)
    a. Duparc I (Kagen), high, p. 31-34, d-f', trés lent, literal Eng. trans. p. 31.
    b. Seven Cent. Solo Song, Vol. VI, high, p. 12-13; d-f', lento molto, Eng. trans. for singing above the French text.
    c. Duparc II (Kagen), medium, p. 31-34; c-e flat', trés lent, literal Eng. trans. p. 31.
    d. Seven Cent. Solo Song, Vol. VI, low, p. 12-13; c-e flat', lento molto, Eng. trans. for singing above the French text.
    e. Duparc II (Kagen), low, p. 30-33, B flat-d flat', trés lent, literal Eng. trans. p. 30.
38. Le manoir de Rosemonde (Bonnières)
    a. Duparc I (Kagen), high, p. 27-30, d-a flat', assez vif et avec force, literal Eng. trans. p. 27.
    b. French Art Songs, medium high, p. 58-61, d-a flat', allegro assai et con fuoco; Eng. trans. for singing above French text.
    c. Duparc II (Kagen), medium, p. 26-30, B-f', assez vif et avec force, literal Eng. trans. p. 26.
    d. French Art Songs, medium low, p. 58-61; B-f', allegro assai et con fuoco; Eng. trans. for singing above French text.
    e. Duparc II (Kagen), low, p. 26-29, B flat-e', assez vif et avec force, literal Eng. trans. p. 26.
39. Phidylé (Leconte de Lisle)
    a. Duparc I (Kagen), high, p. 4-12, e flat-a flat', lent et calme, literal Eng. trans. p. 4.
    b. Duparc II (Kagen), medium, p. 2-10, c sharp-f sharp', lent et calme, literal Eng. trans. p. 2.
    c. Duparc II (Kagen), low, p. 2-10, B-e', lent et calme, literal Eng trans. p. 2.
40. Sérénade florentine (Lahor)
    a. Duparc I (Kagen), high, p. 21-23, f-g', assez lent, literal Eng. trans. p. 21.
    b. Duparc II (Kagen), medium, p. 20-22, e flat-f', assez lent, literal Eng. trans. p. 20.
    c. Duparc II (Kagen), low, p. 20-22, d flat-e flat', assez lent, literal Eng. trans. p. 20.
41. Soupir (Prudhomme)
    a. Duparc I (Kagen), high, p. 53-56, e-a flat', lent, literal Eng. trans. p. 53.
    b. Modern French Songs, high, p. 108-111, e-a flat', lento; Eng. trans. for singing above French text.

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- c. Duparc II (Kagen), medium, p. 54-57; c sharp-f'; lent; literal Eng. trans. p. 54.
- d. Duparc II (Kagen), low, p. 52-55; B-e flat'; lent; literal Eng. trans. p. 52.
- e. Modern French Songs, low, p. 108-111; B-e flat'; lento; Eng. trans. for singing above French text.

FAURÉ, GABRIEL (1845-1924)

42 Adieu (Grandmougin)
- a. Fauré (Kagen), high, p. 79-81; f-f'; moderato; literal Eng. trans. p. 79.
- b. Fauré Album II, p. 24-26; f-f'; no Eng. trans. included.
- c. Fauré (Kagen), medium, p. 78-80; e-e'; moderato; literal Eng. trans. p. 78.
- d. Fauré (Kagen), low, p. 78-80; d-d'; moderato; literal Eng. trans. p. 78.

43 Au bord de l'eau (Prudhomme)
- a. Fauré (Kagen), high, p. 22-25; c sharp-f sharp'; andante quasi allegretto; literal Eng. trans. p. 22.
- b. Fauré (Kagen), medium, p. 21-24; c-f'; andante quasi allegretto; literal Eng. trans. p. 21.
- c. Fauré Album I, p. 78-81; c-f'; andante quasi allegretto; no Eng. trans. included.
- d. Fauré (Kagen), low, p. 21-24; B flat-e flat'; andante quasi allegretto; literal Eng. trans. p. 21.

44 Aurore (Silvestre)
- a. Fauré (Kagen), high, p. 13-16; d-g'; andante; literal Eng. trans. p. 13.
- b. Fauré Album II, p. 49-50; d-g'; andante; no Eng. trans. included.
- c. Great Art Songs, high, p. 169-173; d-g'; andante; Eng. trans. for singing underlaid.
- d. Great Art Songs, low, p. 169-173; c-f'; andante; Eng. trans. for singing underlaid.
- e. Fifty Art Songs, p. 69-72; c-f'; andante; Eng. trans. for singing underlaid.
- f. Fauré (Kagen), medium, p. 12-15; c-f'; andante; literal Eng. trans. p. 12.
- g. Fauré (Kagen), low, p. 12-15; B-e'; andante; literal Eng. trans. p. 12.

45 Chanson d'amour (Silvestre)
- a. Fauré Album II, p. 37-40; g-f sharp'; allegro moderato; no Eng. trans. included.

46 Clair de lune (Verlaine)
- a. Fauré (Kagen), high, p. 89-93; g-g'; andantino quasi allegretto; literal Eng. trans. p. 89.
- b. Fauré Album II, p. 76-80; g-g'; andantino quasi allegretto; no Eng. trans. included.
- c. Modern French Songs, high, p. 112-116; g-g'; andantino quasi allegretto; Eng. trans. for singing above French text.
- d. Fauré (Kagen), medium, p. 88-92; f-f'; andantino quasi allegretto; literal Eng. trans. p. 88.
- e. Modern French Songs, low, p. 112-116; d sharp-d sharp'; andantino quasi allegretto; Eng. trans. for singing above French text.
- f. Fauré (Kagen), low, p. 88-92; d-d'; andantino quasi allegretto; literal Eng. trans. p. 88.

47 En prière (Bordèse)
- a. Fauré Album II, p. 66-70; f-f'; moderato; no Eng. trans. included.
- b. Fifty Art Songs, p. 65-69; f-f'; moderato; Eng. trans. for singing included.

48 En sourdine (Verlaine)
- a. Fauré (Kagen), high, p. 17-21; d sharp-f sharp'; andante moderato; literal Eng. trans. p. 17.
- b. Fauré (Kagen), medium, p. 16-20; c-e flat'; andante moderato; literal Eng. trans. p. 16.
- c. Fauré (Kagen), low, p. 16-20; c-e flat'; andante moderato; literal Eng. trans. p. 16.

49 La fée aux chansons (Silvestre)
- a. Fauré Album II, p. 41-46; f-f'; allegretto vivo; no Eng. trans. included.

50 Fleur jetée (Silvestre)
- a. Fauré (Kagen), high, p. 94-97; d flat-a'; allegro energico; literal

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Eng. trans. p. 94.

b. Fauré Album II, p. 51-54; d flat-a'; allegro energico; no Eng. trans. included.

c. Fauré (Kagen), medium, p. 93-97; B flat-f sharp'; allegro energico; literal Eng. trans. p. 93.

d. Fauré (Kagen), low, p. 93-97; A flat-e'; allegro energico, literal Eng. trans. p. 93.

51. Green (Verlaine)

a. Fauré (Kagen), high, p. 57-59; e flat-a flat'; andante con moto; literal Eng. trans. p. 57.

b. Fauré (Kagen), medium, p. 56-58; d flat-g flat'; andante con moto; literal Eng. trans. p. 56.

c. Fauré (Kagen), low, p. 56-58; B-e'; andante con moto; literal Eng. trans. p. 56.

52. Ici-bas (Prudhomme)

a. Fauré (Kagen), high, p. 41-43; f sharp-g'; andantino; literal Eng. trans. p. 41.

b. Great Art Songs, high, p. 179-181; f sharp-g'; andantino, Eng. trans. for singing underlaid.

c. Fauré Album I, p. 86-88; f-f sharp'; adagio; no Eng. trans. included.

d. Fauré (Kagen), medium, p. 40-42; f-f sharp'; andantino; literal Eng. trans. p. 40.

e. Fauré (Kagen), low, p. 40-42; d sharp-e'; andantino; literal Eng. trans. p. 40.

f. Great Art Songs, low, p. 179-181; d sharp-e'; andantino, Eng. trans. for singing underlaid.

53. Mandoline (Verlaine)

a. Fauré (Kagen), high, p. 84-88; e flat-f'; allegretto moderato, literal Eng. trans. p. 84.

b. Fauré (Kagen), medium, p. 83-87; d-e'; allegretto moderato; literal Eng. trans. p. 83.

c. Fauré (Kagen), low, p. 83-87; c-d'; allegretto moderato, literal Eng. trans. p. 83.

54. Le papillon et la fleur (Hugo)

a. Fauré Album I, p. 1-4; c-f'; allegro non troppo, no Eng. trans. included.

55. Rencontre (Grandmougin)

a. Fauré Album II, p. 16-19; e flat-a flat'; andante, no Eng. trans. included.

b. Ant. Mod. Fr. Song, high, p. 113-117; e flat-a flat'; andante; Eng. trans. for singing underlaid.

c. Ant. Mod. Fr. Song, low, p. 113-117; c sharp-f sharp'; andante; Eng. trans. for singing underlaid.

56. Les roses d'Ispahan (Leconte de Lisle)

a. Fauré (Kagen), high, p. 60-64; e-g sharp'; andantino; no Eng. trans. included.

b. Fauré Album II, p. 61-65; e-g sharp'; andantino; no Eng. trans. included

c. Modern French Songs, high, p. 121-125; e-g sharp'; andantino; Eng. trans. for singing above French text.

d. Ant. Mod. Fr. Song, high, p. 103-107; e-g sharp'; andantino, Eng. trans. for singing underlaid.

e. Fauré (Kagen), medium, p. 59-63; d-f sharp'; andantino; literal Eng. trans. p. 59.

f. Ant. Mod. Fr. Song, low, p. 103-107; d-f sharp'; andantino, Eng. trans. for singing underlaid.

g. Fauré (Kagen), low, p. 59-63; c-e'; andantino; literal Eng. trans. p. 59.

h. Modern French Songs, low, p. 121-125; c-e'; andantino; Eng. trans. for singing above French text.

57. Le secret (Silvestre)

a. Fauré Album II, p. 35-36; f-g'; adagio, no Eng. trans. included

58. Toujours (Grandmougin)

a. Fauré Album II, p. 20-23; f-a flat'; allegro con fuoco; no Eng. trans. included.

59. Le voyageur (Silvestre)

a. Fauré Album II, p. 8-11; e-g'; allegro moderato; no Eng. trans. included.

FERRARI, GUSTAVE (1872-1948)

60. J'ai tant de choses à vous dire (Lamquet)

a. Modern French Songs, high, p. 126-129; e-g sharp'; allegretto,

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Eng. trans. for singing above French text.

b. Modern French Songs, low, p. 126-129; c-e'; allegretto; Eng. trans. for singing above French text.

61 Le miroir (Haraucourt)

a. Sel. Fr. Art Songs, p. 20-21; e-f'; tranquillo e legato; Eng. trans. for singing underlaid.

b. 40 French Songs II, high, p. 35-36; e-f'; assez lent; literal Eng. trans. p. 35.

c. Great Art Songs, high, p. 167-168; e-f'; tranquillo e legato; Eng. trans. for singing underlaid.

d. 40 French Songs II, medium, p. 34-35; c sharp- d'; assez lent; literal Eng. trans. p. VI.

e. 40 French Songs II, low, p. 28-29; c sharp-d'; assez lent; literal Eng. trans. p. V.

f. Great Art Songs, low, p. 167-168; c sharp-d'; tranquillo e legato; Eng. trans. for singing underlaid.

FRANCK, CÉSAR (1822-1890)

62 Le mariage des roses (David)

a. Ant. Mod. Fr. Song, high, p. 92-97; e-f sharp'; poco allegretto; Eng. trans. for singing underlaid.

b. Modern French Songs, high, p. 135-140; e-f sharp'; poco allegretto; Eng. trans. for singing above French text.

c. Ant. Mod. Fr. Song, low, p. 92-97; d-e'; poco allegretto; Eng. trans. for singing underlaid.

d. Modern French Songs, low, p. 135-140; c-d'; poco allegretto; Eng. trans. for singing above French text.

63 Nocturne (Fourcaud)

a. 40 French Songs I, high, p. 51-55; f sharp-f sharp'; lentement; literal Eng. trans. p. VII.

b. 40 French Songs I, medium, p. 49-53; d sharp-d sharp'; lentement; literal Eng. trans. p. VII.

c. 40 French Songs I, low, p. 48-52; c sharp-c sharp'; lentement; literal Eng. trans. p. VII.

64 La procession (Brizeux)

a. 40 French Songs I, high, p. 46-50; e-g sharp'; assez lent et solennel; literal Eng. trans. p. VII.

b. 40 French Songs I, medium, p. 44-48; d-f sharp'; assez lent et solennel; literal Eng. trans. p. VII.

c. 40 French Songs I, low, p. 43-47; c-e'; assez lent et solennel; literal Eng. trans. p. VII.

GEORGES, ALEXANDRE (1850-1938)

65 Hymne au soleil (Richepin)

a. 40 French Songs I, high, p. 56-59; e-a'; largo; literal Eng. trans. p. VII.

b. 40 French Songs I, medium, p. 54-57; c sharp-f sharp'; largo; literal Eng. trans. p. VII.

c. 40 French Songs I, low, p. 53-56; c-f'; largo; literal Eng. trans. p. VII.

66 La pluie (Richepin)

a. 40 French Songs I, high, p. 60-62; e-e'; allegro moderato; literal Eng. trans. p. VII.

b. 40 French Songs I, medium, p. 58-60; e-e'; allegro moderato; literal Eng. trans. p. VII.

c. 40 French Songs I, low, p. 57-59; d-d'; allegro moderato; literal Eng. trans. p. VII.

GODARD, BENJAMIN (1849-1895)

67 Chanson de Florian or Florian's Song (Florian)

a. Art Songs for School and Studio, medium high, p. 62-64; d-f sharp'; allegretto; Eng. trans. for singing above French text.

b. Art Songs for School and Studio, medium low, p. 62-64; B-d'; allegretto; Eng. trans. for singing above French text.

HAHN, REYNALDO (1874-1947)

68 L'heure exquise (Verlaine)

a. French Art Songs, medium high, p. 32-34; d-f sharp'; molto dolce e tranquillo; Eng. trans. for singing above French text.

b. 40 French Songs II, high, p. 37-39; d flat-f'; infiniment doux et

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    calme; literal Eng. trans. p. 37.
    c. Hahn (Kagen), high, p. 40-42; d flat-f'; infiniment doux et calme, literal Eng. trans. p. 40.
    d. Fifty Art Songs, p. 92-94; d flat-f'; tranquillo e dolce possible, Eng trans. for singing underlaid.
    e. Hahn (Kagen), low, p. 40-42; B-d sharp'; infiniment doux et calme, literal Eng. trans. p. 40.
    f. French Art Songs, medium low, p. 32-34; B-d sharp', molto dolce e tranquillo; Eng. trans. for singing above French text.
    g. 40 French Songs II, medium, p. 36-38; B-d sharp'; infiniment doux et calme; literal Eng. trans. p. VI.
    h. 40 French Songs II, low, p. 36-38; B-d sharp', infiniment doux et calme; literal Eng. trans. p. VI.

69. Offrande (Verlaine)
    a. 40 French Songs II, high, p. 40-42; e flat-e flat', pas trop lent, literal Eng. trans. p. 40.
    b. Hahn (Kagen), high, p. 21-23; e flat-e flat'; pas trop lent, literal Eng. trans. p. 21.
    c. Sel. Fr. Art Songs, p. 2-5; d-d'; moderato; Eng. trans for singing underlaid.
    d. 40 French Songs II, medium, p. 39-41; d-d'; pas trop lent, literal Eng. trans. p. VI.
    e. Great Art Songs, high, p. 193-196; d-d'; pas trop lent; Eng. trans for singing underlaid.
    f. Hahn (Kagen), low, p. 21-23; c-c'; pas trop lent; literal Eng trans p. 21.
    g. 40 French Songs II, low, p. 39-41; c-c'; pas trop lent; literal Eng trans. p. VI.
    h. Great Art Songs, low, p. 193-196; B flat-b flat; pas trop lent, Eng trans. for singing underlaid.

70. Quand je fus pris au pavillon (Charles d'Orleans)
    a. Hahn (Kagen), high, p. 28-29; f sharp-f sharp', vite, très légèrement, literal Eng. trans. p. 28.
    b. Hahn (Kagen), low, p. 28-29; e flat-e flat'; vite, très legérèment, literal Eng. trans. p. 28.

71. Si mes vers avaient des ailes (Hugo)
    a. Sel. Fr. Art Songs, p. 35-37; c sharp-g sharp'; andante moderato, Eng. trans. for singing underlaid.
    b. 40 French Songs II, high, p. 43-45; c sharp-g sharp', andante moderato; literal Eng. trans. p. 43.
    c. Hahn (Kagen), high, p. 43-45; c sharp-g sharp'; andante moderato, literal Eng. trans. p. 43.
    d. French Art Songs, medium high, p. 6-8; c sharp-g sharp', andante moderato; Eng. trans. for singing above French text.
    e. 40 French Songs II, medium, p. 42-44, B-f sharp'; andante moderato, literal Eng. trans. p. VI.
    f. Hahn (Kagen), low, p. 43-45; A-e'; andante moderato, literal Eng trans. p. 43.
    g. French Art Songs, medium low, p. 6-8; A-e', andante moderato, Eng. trans. for singing above French text.
    h. 40 French Songs II, low, p. 42-44; A-e'; andante moderato, literal Eng. trans. p. VI.

72. Trois jours de vendange (Daudet)
    a. Hahn (Kagen), high, p. 30-34; B-e flat'; franc et rythmé, literal Eng. trans. p. 30.
    b. Hahn (Kagen), low, p. 30-34; A-d flat', franc et rythmé, literal Eng. trans. p. 30.

HUE, GEORGES (1858-1948)

73. J'ai pleuré en rêve (Nerval)
    a. Fifty Art Songs, p. 89-91; f-g'; lento ed intimo; Eng trans for singing underlaid
    b. 40 French Songs II, high, p. 50-51, f-g ; lento, literal Eng trans. p. 50.
    c. 40 French Songs II, medium, p. 49-50, e flat-f', lento, literal Eng trans. p. VII.
    d. 40 French Songs II, low, p. 48-49, d flat-e flat', lento, literal Eng trans. p. VII.

D'INDY, VINCENT (1851-1931)

74. Madrigal (Bonnieres)

a. 40 French Songs II, high, p. 63-66; e-e'; modéré; literal Eng. trans. p. 63.
b. 40 French Songs II, medium, p. 56-58; c-c'; modéré; literal Eng. trans. p. VII.
c. 40 French Songs II, low, p. 54-56; c-c'; modéré; literal Eng. trans. p. VII.

LISZT, FRANZ (1811-1886)

75. Oh! Quand je dors (Hugo)
a. French Songs I, high, p. 75-80; d sharp-a'; andante, literal Eng. trans. p. IX.
b. Liszt Twelve Songs, high, p. 38-42; d sharp-a'; andante, Eng. trans. for singing underlaid.
c. Liszt Twelve Songs, low, p. 38-42; B-f'; andante; Eng. trans. for singing underlaid.
d. 40 French Songs II, medium, p. 59-64; B-f'; andante; literal Eng. trans. p. VIII.
e. 40 French Songs II, low, p. 57-62; B-f'; andante; literal Eng. trans. p. VIII.

76. S'il est un charmant gazon (Hugo)
a. Liszt Twelve Songs, high, p. 43-46; e flat-f'; allegretto con moto e grazioso; Eng. trans. for singing underlaid.
b. Liszt Twelve Songs, low, p. 43-46; d flat-e flat'; allegretto con moto e grazioso; Eng. trans. for singing underlaid.

MARTINI, JEAN PAUL ÉGIDE (1741-1816)

77. Plaisir d'amour (anonymous)
a. Seven Cent. Solo Song III, high, p. 28-32; c-f'; moderato grazioso; Eng. trans. for singing above French text.
b. Seven Cent. Solo Song III, low, p. 28-32; B flat-e flat'; moderato grazioso, Eng. trans. for singing above French text.

MASSENET, JULES (1842-1912)

78. Crépuscule (Silvestre)
a. 40 French Songs II, high, p. 67-68; d-e'; allegretto; literal Eng. trans. p. 67.
b. 40 French Songs II, medium, p. 65-66; d-e'; allegretto; literal Eng. trans. p. VIII.
c. 40 French Songs II, low, p. 63-64, B-c sharp'; allegretto; literal Eng. trans. p. VIII.

MONSIGNY, PIERRE (1729-1817)

79. O ma tendre musette (La Harpe)
a. Weckerlin Bergerettes, p. 10-11, g sharp-e'; andante; Eng. trans. for singing p. 11 (verse 1 only underlaid).

PALADILHE, EMILE (1844-1926)

80. Psyché (Corneille)
a. 40 French Songs I, high, p. 81-83, c-g' (a flat'); andante quasi andantino, literal Eng. trans. p. IX.
b. Ant. Mod. Fr. Song, high, p. 149-151; B flat-f' (g flat'); andante quasi andantino, Eng. trans. for singing underlaid.
c. Ant. Mod. Fr. Song, low, p. 149-151, B flat-f' (g flat'); andante quasi andantino, Eng. trans. for singing underlaid.
d. 40 French Songs I, medium, p. 76-78, B flat-f' (g flat'), andante quasi andantino; literal Eng. trans. p. IX.
e. 40 French Songs I, low, p. 76-77, A-e' (f'), andante quasi andantino; literal Eng. trans. p. IX.

81. Les trois prières (Essarts)
a. Ant. Mod. Fr. Song, high, p. 146-148, d flat-a flat'; andante; Eng. trans. for singing underlaid.
b. Ant. Mod. Fr. Song, low, p. 146-148, B flat-f', andante; Eng. trans. for singing underlaid.

PERGOLESI, GIOVANNI (1710-1736)

82. Que ne suis-je la fougère (Riboutté)
a. Weckerlin Bergerettes, p. 12-13, f sharp-e flat', andante; Eng. trans. for singing p. 13, (verse 1 only underlaid).

BEST C

PIERNE, GABRIEL (1863-1937)

83. A Lucette (Gauthier-Villars)
    - a. Ant. Mod. Fr. Song, high, p. 44-49; e-g'; andante; Eng. trans. for singing underlaid.
    - b. Ant. Mod. Fr. Song, low, p. 44-49; d-f'; andante; Eng. trans. for singing underlaid.

POULENC, FRANCIS (1899-1963)

84. Air champêtre (Moréas)
    - a. Airs chantés, p. 8-11; c sharp-b'; vite; Eng. and German trans. for singing underlaid.
85. Air grave (Moréas)
    - a. Airs chantés, p. 12-14; e-a flat'; andante con moto; Eng. and German trans. for singing underlaid.
86. Air romantique (Moréas)
    - a. Airs chantés, p. 2-7; c-e'; extrêmement animé; Eng. and German trans. for singing underlaid.
87. Air vif (Moréas)
    - a. Airs chantés, p. 15-19; d-a flat', prestotrès gai; Eng. and German trans. for singing underlaid.
88. A toutes brides (Éluard)
    - a. Tel jour, telle nuit, p. 10-11; B flat-g', prestissimo; no Eng. trans. included.
89. Bonne journée (Éluard)
    - a. Tel jour, telle nuit, p. 1-3; B-a flat', calme; no Eng. trans. included.
90. Figure de force brûlante et farouche (Éluard)
    - a. Tel jour, telle nuit, p. 17-19; d-a', presto, très violent; no Eng. trans. included.
91. Le front comme un drapeau perdu (Éluard)
    - a. Tel jour, telle nuit, p. 6-8; d flat-g'; très animé, no Eng. trans. included.
92. Je n'ai envie que de t'aimer (Éluard)
    - a. Tel jour, telle nuit, p. 14-16; d flat-g flat'; très allant et très souple; no Eng. trans. included.
93. Nous avons fait la nuit (Éluard)
    - a. Tel jour, telle nuit, p. 20-23; c-g', très modéré, sans traîner pourtant; no Eng. trans. included.
94. Une herbe pauvre (Éluard)
    - a. Tel jour, telle nuit, p. 12-13; e-g'; clair, doux et lent, no Eng. trans. included.
95. Une roulotte couverte en tuiles (Éluard)
    - a. Tel jour, telle nuit, p. 9; B-c sharp'; très lent et sinistre, no Eng. trans. included.
96. Une ruine coquille vide (Éluard)
    - a. Tel jour, telle nuit, p. 4-5; d-g', très calme et irréel, no Eng. trans. included.

RAVEL, MAURICE (1875-1937)

97. Chanson de la mariée (anonymous)
    - a. Ravel Douze chants, voix élevées, p. 5-9; g-e flat'; modéré, Eng. trans. for singing underlaid.
    - b. Ravel Douze chants, voix moyennes, p. 5-9; g-e flat'; modéré, Eng. trans. for singing underlaid.
98. Chanson des cueilleuses de lentisques (anonymous)
    - a. Ravel Douze Chants, voix élevées, p. 14-16, a-e'; lent, Eng. trans. for singing underlaid.
    - b. Ravel Douze chants, voix moyennes, p. 14-16; a-e', lent; Eng. trans. for singing underlaid.
99. Chanson espagnole (anonymous)
    - a. Fifty Art Songs, p. 57-61; d-b flat'; andantino, Eng. and Spanish trans. for singing underlaid.
100. Là-bas, vers l'église (anonymous)
    - a. Ravel Douze Chants, voix élevées, p. 10-11, g sharp-e', andante; Eng. trans. for singing underlaid.
    - b. Ravel Douze Chants, voix moyennes, p. 10-11; g sharp-e', andante, Eng. trans. for singing underlaid.
101. Quel galant m'est comparable (anonymous)
    - a. Ravel Douze Chants, voix élevées, p. 12-13, d-f', allegro, Eng. trans. for singing underlaid.
    - b. Ravel Douze Chants, voix moyennes, p. 12-13; d-f', allegro, Eng. trans. for singing underlaid.

PY AVAILABLE

102. Sainte (Mallarmé)
  a. Ravel Douze Chants, voix élevées, p. 1-4; d-a'; liturgiquement; Eng. trans. for singing underlaid.
  b. Ravel Douze Chants, voix moyennes, p. 1-4; c-g'; liturgiquement; Eng. trans. for singing underlaid.
103. Tout gai (anonymous)
  a. Ravel Douze Chants, voix élevées, p. 17-19; g-f'; allegro; Eng. trans. for singing underlaid.
  b. Ravel Douze Chants, voix moyennes, p. 17-19; g-f'; allegro; Eng. trans. for singing underlaid.

RIEGGER, WALLINGFORD (1885-1961)
104. Charmant bocage (anonymous)
  a. Riegger Bergerettes, p. 1; d flat-e flat'; allegretto semplice; no Eng. trans. included.
105. Toi, dont les yeux (anonymous)
  a. Riegger Bergerettes, p. 3; e-e'; moderato; no Eng. trans. included.

SAINT-SAENS, CAMILLE (1835-1921)
106. Aimons-nous (Banville)
  a. 40 French Songs I, high, p. 84-87; g flat-a flat'; assez lent; literal Eng. trans. p. IX.
  b. 40 French Songs I, medium, p. 79-82; d-e'; assez lent; literal Eng. trans. p. IX.
  c. 40 French Songs I, low, p. 78-81; d flat-e flat'; assez lent; literal Eng. trans. p. IX.

WECKERLIN, JEAN-BAPTISTE-THEODORE (1821-1910)
107. Aminte (anonymous)
  a. Weckerlin Bergerettes, p. 19-21; c-d'; moderato; Eng. trans. for singing underlaid.
108. Chaque chose a son temps (anonymous)
  a. Weckerlin Bergerettes, p. 48-49; c-e'; andantino quasi allegretto; Eng. trans. for singing underlaid.
109. Je connais un berger discret (anonymous)
  a. Weckerlin Bergerettes, p. 44-45; e flat-f'; un poco andantino; Eng. trans. for singing underlaid.
110. Jeune fillette (anonymous)
  a. Weckerlin Bergerettes, p. 22-24; g-e'; con moto; Eng. trans. for singing underlaid.
111. Lisette (anonymous)
  a. Weckerlin Bergerettes, p. 50-51; f sharp-g'; con moto; Eng. trans. for singing underlaid.
112. Maman, dites-moi (anonymous)
  a. Weckerlin Bergerettes, p. 25-29; e flat-f sharp'; un poco allegretto; Eng. trans. for singing underlaid.

WIDOR, CHARLES-MARIE (1844-1937)
113. Contemplation (Hugo)
  a. Sel. Fr. Art Songs, p. 14-16; d-g'; lento; Eng. trans. for singing underlaid.

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A GUIDE TO THE COMPASS OF THE SONGS LISTED

An octave or less
    12, 13, 15, 23, 42, 45, 46, 47, 49, 63, 66, 69, 70, 74, 79, 82, 97, 98, 99, 100, 103, 105, 108, 110.

Greater than an octave but not greater than a tenth
    2, 5, 9, 10, 14, 16, 17, 19, 20, 22, 25, 28, 37, 39, 40, 48, 52, 53, 56, 57, 58, 59, 60, 61, 62, 64, 67, 68, 73, 76, 78, 83, 85, 86, 94, 95, 101, 104, 106, 107, 109, 111, 112.

Greater than a tenth but not greater than a twelfth
    3, 4, 6, 8, 11, 18, 21, 26, 27, 29, 30, 32, 33, 35, 38, 41, 43, 44, 51, 54, 55, 65, 71, 72, 75, 77, 81, 87, 90, 91, 92, 93, 96, 102, 113.

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A GENERAL GUIDE TO THE TEMPOS OF THE SONGS LISTED

Note: The general nature of the classifications in this guide is intentional. The purpose was not to index the actual tempo indication of the song because that varies somewhat from publication to publication but to give the relative tempo of the song as an aid to the user in building a program. The assignment of a particular song to a particular classification is in some cases entirely arbitrary.

Slow
3, 4, 5, 7, 8, 13, 16, 19, 20, 23, 24, 27, 34, 36, 37, 39, 40, 41, 57, 61, 63, 64, 65, 68, 73, 85, 94, 95, 98, 100, 102, 106, 113.

Moderate
2, 10, 11, 12, 21, 22, 25, 28, 29, 42, 43, 44, 45, 46, 47, 48, 51, 52, 55, 56, 59, 60, 62, 66, 69, 71, 74, 75, 77, 78, 79, 80, 81, 82, 83, 89, 93, 96, 97, 99, 104, 105, 107, 109, 112.

Fast
1, 6, 9, 14, 15, 17, 18, 26, 30, 31, 32, 33, 35, 38, 49, 50, 53, 54, 58, 67, 70, 72, 76, 84, 86, 87, 88, 90, 91, 92, 101, 103, 108, 110, 111.

The Evolution of Symphonic Instrumentation of the Nineteenth Century

Don Verne Joseph
Drury College

Progressive music of the seventeenth and eighteenth centuries, for the most part, was not instrumental, but predominantly operatic and was centered in Italy. In the following century the emphasis shifted to the symphonic movement in Germany that lasted into the twentieth century.

The Italian opera overture is the predecessor to the Classical symphony as its elements of style and structure were developed into that form by a succession of composers including Gluck, Stamitz and C. P. E. Bach. G. B. Sammartini is generally credited with starting the movement which presented operatic overtures (called sinfonias, although they were not symphonies in the full connotation of the word) in the concert hall. These were usually three-movement works to which Sammartini added the Minuet that eventually, with the other movements, became the traditional four-movement Classical period symphony.

Jean Phillippe Rameau was one of the first composers to give each instrument a distinct part of its own, although he was more noted for operatic composition. "He introduced interesting and unexpected passages on the flutes, oboes, and bassoons and thus opened the path to the coloristic treatment of the modern orchestra."[1]

The Development of Orchestral Instruments in the Nineteenth Century

As we consider the scoring practices of various composers, it seems evident that programs in the technical art of composition and the growth and development of musical instruments are inseparable. The modern period of orchestration, with the accompanying problems of instrumentation, has its beginning with the works of Haydn and Mozart.

Concurrently, the improvements in performing media, the invention of new instruments and their subsequent improvements, have enhanced the instrumentation of the symphony orchestra as well as serving as aids to composers, arrangers and instrumental performers throughout history. It seems logical to mention some of the "discoveries" at this point, rather than during the text inasmuch as the use of these improved instruments varied so greatly. Just as we know that little of Mozart's music was published during his lifetime, the invention of a new instrument did not necessarily assure its immediate acceptance and use by the orchestra, conductor or composer. The following information comprises a partial accounting of the developments which have led us to our present symphonic instrumentation, and which was so vital to the nineteenth century.

The string section, which is the foundation of the orchestra, was rather complete at a date before the Classical period. This was due primarily to the great Italian violin makers: Amati (1596-1684), Stradivari (1644-1737), and Guarneri (1698-1744). The shape of the violin changed toward the end of the eighteenth century as musicians sought more brilliancy and power. The bridge was then raised and more highly arched. The viola was originally smaller than the present model due to its subordinate position in the music of the eighteenth century. The violoncello began its career as a bass viola da bracio; however, the modern pattern of the violoncello must have originated in the middle of the seventeenth century. The double bass existed in Germany as early as the sixteenth century, and has generally retained the viol system of tuning in fourths. It is interesting to note that the first string orchestras, in the seventeenth century, included both violin and viols, but before the end of the century had settled down to a group of violin types: first violin, second violin, tenor violin, and basses, the string "quartet" employed by Scarlatti, Bach and all their successors. The bow was longer in developing and it was not until the end of the eighteenth century that the French master, Tourte, brought it to its present state.

The one-keyed flute of the eighteenth century, the instrument for which Bach, Handel, Haydn and Mozart wrote, had a range from d' to a''' which was completely chromatic except for the high F. Improvements were made by: Nolan, who invented the ring-key in 1808; Nicholson, who enlarged the fingerholes; Gordon, who changed the position of the holes and employed Nolan's ring-key (1820-1830); and by the German flutist, Theobald Booehm, who finalized all improvements to that date (1831), and in 1846, created the cylindrical flute with the parabolic head.

The two-keyed oboe, known from Haydn through early Beethoven, was made in three pieces, of boxwood, ebony or ivory, with keys of brass or silver. Like the flute, six fingerholes provided the natural D scale. The funnel-shaped bell became cylindrical at the beginning of the nineteenth century. Cupped keys with stuffed pads, pillar-mounts and the ring-keys and rod-axles of Boehm's 1832 flute began to spread to other woodwind instruments about 1840. Schubert, Weber and Beethoven and their contemporaries cover the period when the oboe was gaining its keys: from the eighteenth century two-key model to the complete chromatic model with the octave key and low B-natural on the ball joint. There was a tendency as early as the late eighteenth century to distinguish between a French and a German type: the French preferring the thin, sensitive and refined tone quality to the more robust, heavier German instrument. The conservatoire oboe was brought to its final development and completion by Triebert's successor Loree and Gillet (1880).

The five-keyed clarinet, the standard type towards the end of the eighteenth century, is the instrument which began the establishment of the clarinet(s) in the orchestra. It is the instrument that Mozart composed a concerto for during the Mannheim era, and was composed of six pieces: (1) the ebony mouthpiece (2) barrel (3) upper-middle-piece (4) lower middlepiece (5) lower piece, and (6) the bell. Ivan Muller created the modern clarinet with its thirteen keys about 1800. This was the most influential model, although an instrument with nineteen keys was exhibited and used by J. F. Simiot (and Muller) of France. Men responsible for further improvements include Klose, who adapted Boehmn's flute ring-key mechanism system to the clarinet in 1832, and Buffet, who perfected the present 17 key-6 ring system in 1846.

Bassoons with six keys and fourteen note-holes were prevalent before 1800 and utilized in the scoring of Haydn and Mozart. In 1831, Johann Heckel began the improvements that would culminate in the finished product, the Heckel-Almenrader (German bassoon) in 1880.

There are several steps in the evolution of horns after they began to appear in orchestral scores shortly after 1700. The natural horn (1625-1750) had no valves and was used for coloristic effects (hunting calls). The hand horn (1750-1820) utilized the "corno a mano" technique. A chromatic scale could be executed by using hand manipulation in the technical style mentioned previously. Crooks were employed in both the natural and hand horns, usually in the keys of G, F, E , D and C, although crooks used for trumpets predate the horns. The two-valve horn (1820) was simply a quick way to change crooks. That is, when one valve was depressed — the other crook was then put into operation. The three-valved horn (1832-1850) was a fully chromatic horn and utilized the rotary valve invented by Joseph Reidl, although there were still some instruments using the piston valve. The double horn, as used today, was first manufactured by Kruspe in 1899.

After the trumpet guilds dissipated, several developments were influential in the production of the chromatic instrument. The Demilune model (late 18th century) was similar to the horn and utilized a hand-stopping technique to partially fill the gaps in the chromatic scale and the natural harmonic series. The keyed trumpet with four brass keys, was introduced in Vienna by Weidinger. Haydn's well-known concerto was written for this instrument manufactured by Riedl of the same city, and for forty years, enjoyed a limited success. The superior keyed bugle preceded the Stolzel-Blumel experiments which produced the piston valve in 1813-1818. While the trumpet valve experimentations were taking place, the cornet-a-piston evolved and enjoyed great popularity in the military bands as well as being used by Berlioz in his Fantastic Symphony in 1830. Wilhelm Wieprecht, a Prussian bandmaster made the first improvement in the piston valve in 1835, and the Frenchman, Perinet brought out the valve, which with minor modifications, is the piston valve which is universally in use today.

The trombones, although not used in a symphonic work until 1807 (Beethoven's 5th Symphony) reached their permanent shape earlier than any of the present-day orchestral instruments. The slide principle can be traced to the fifteenth century; however, its counterpart being called Sackbut. The extra valve, called the trigger, we are familiar with today, was developed by Adolphe Sax, according to Berlioz, and his invention led to both the bass trombone and the Bb-F tenor trombone.

The French serpentist, Frichot, is generally credited with the invention of the tuba (1800). Wieprecht's invention, the "Berliner Pumpventil" of 1835, made the first serious improvement; helicon models were invented by Stowasser in 1849; about the same time Wagner called for a line of tubas to be manufactured for his operatic scores, and Phasey developed the first bombardon in 1879. The sousaphone was developed in 1897 by the Conn corporation (USA).

The percussion section was slow in its development in the orchestra, the kettledrums being the only members until Haydn scored for the Turkish instruments (triangle, cymbals and bass drum) in his Military Symphony (1794). Twenty-nine years later Beethoven used the same combination of instruments in the finale to his ninth symphony. Until this point, and even later as well, the kettledrums were expected to produce only the tonic and dominant tonalities in hundreds of works.

Miscellaneous instruments of all types and keys will be discussed later in the paper as they relate to the composers and compoistions. These include basset horns, sarrusophones, color clarinets (Ab, Eb, alto, bass), English horn, contra-bassoon, piccolo, saxophones and all types of percussion.

Berlioz' "Grand Treatise on Instrumentation" was published in 1844, and provides a most informative history of the developments in wind instruments to date. An interesting fact is that at this time when the orchestral instrumentation was near completion, the wind band, as we know it today, was just coming into existence.

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"Of the symphonic composers who succeeded Scarlatti, one of the most conspicuous was Johann Stamitz (1717-1757)."[2] His orchestral scores required flutes, oboes, bassoons and horns in pairs. In addition to these Stamitz and his sons, Karl and Anton, were among the first to utilize the clarinet in the orchestra, although it was not considered a standard member until much later. However, they did write several concerti for the clarinet which at this time was a five-keyed instrument. Perhaps his greatest contribution to music at this time was his conductorship of the orchestra at Mannheim, considered to be the finest in Europe. This orchestra developed many dramatic resources and effects including: (1) synchronized string bowings, (2) uniform quality of tone, (3) unprecedented control of dynamics, including sudden changes from pianissimo to fortissimo, (4) sustained crescendos, and (5) the combination of flexible, varied musical effects that hastened the adoption of the pianoforte, rather than the older harpsichord. The full orchestra was large, numbering about forty players including a string section of 20 violins, 4 violi, 4 celli and 4 bassi.[3]

The final phase of orchestration prior to the masterworks of Haydn and Mozart is represented in the symphonies of C. P. E. Bach. These are scored for the usual group of strings as well as 2 flutes, 2 oboes, 1 or 2 bassoons and 2 horns. His third (Sinfonia III) displays the use of the string trill as a unifying device. Elements of later classical symphonies are also found in this work: (1) vigorous running passages, (2) cadencing, (3) the "sigh" and (4) the emphasis on "storm and stress" through wild, angular melodic lines in the strings, particularly. "The strings (of Bach's four sinfonias) give melodic activity and figuration while the winds provide harmony and body."[4]

During the Classical period the string section became the foundation of the orchestra. The common scoring practice at this time gave a great majority of passages to the strings, utilizing the winds for reinforcing, supporting the melody with sustained chords and doubling the strings. The leading symphonic writer of this era, Joseph Haydn, wrote numerous works in the large forms (104 symphonies — 83 string quartets). The orchestra he wrote for was small compared to the Mannheim orchestra of 1756, and numbered about twenty-five players, including: strings, flute, oboes (2), bassoons (2), horns (2), and a harpsichord, with trumpets and kettledrums occasionally added for specific works. His first symphonies utilized the continuo, although no one actually knows when this practice stopped due to his conducting the orchestra from some keyboard — often improvising the continuo part.

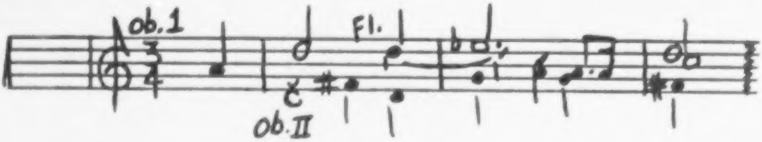
His symphonies are varied both in style and in the use of instrumentation. "Le Midi" (No. 7 in C), is scored for first and second violins concertante as well as the full orchestra. This points up his early training in the use of the older concerto grosso form. No. 31 (With the Horn Signal) shows elaborate parts for four horns (soloistic fanfares, use of dialogue and filler parts in all four movements). There are also unusually ornate and decorative solo passages for flute, violin and violoncello.

"La Passione" (No. 49) is scored in F minor in all four movements. The instrumentation is also on the dark, somber side including oboes, horns, bassoons, strings and continuo. Landon and Truscott both feel there is justification in the fact that Haydn used a bassoon with the continuo, although none is indicated in the score. This work could be regarded as a meditation on the Passion of Christ, although like many of Haydn's works, the descriptive titles belong to the publisher rather than the composer. Haydn achieves an excellent effect (mvt. III) by use of oboes in unison with the first violins which is "echoed" in the full string section. This symphony marks the end of Haydn's use of the continuo for all practical purposes, although Symphony No. 102 calls for the solo cello and basso continuo.

One of the Paris symphonies (No. 85) utilizes the solo flute, which seems to be a frequent occurrence in a great many of his works and especially in his later works. In the third movement his use of bassoon is strangely scored in the upper register as a reinforcement of the upper parts — the lower octave of its compass being almost entirely neglected.[3] This use of the bassoon, in a majority of his last works, shows a tendency toward parts in the alto and tenor range rather than as a foundation instrument for winds.

Symphonies composed between 1785-1788 (Nos. 85-92) show the result of more than twenty-five years of practical experience with the orchestra. By that time he had largely abandoned the thin two-part writing for strings that marks all his early works.[4] Haydn uses the viola to greater advantage than before by writing more independent tenor parts, occasional divisi and double-stopping.

The London symphonies are Haydn's crowning achievement and demonstrate more brilliant orchestration and perhaps more daring instrumentation than previous works in this form. The "Surprise" symphony (No. 94) has the famous subito fortissimo chord (loud crash on a weak beat) during the slow movement. Symphony No. 97/I utilizes an intricate section of three-part counterpoint in the woodwinds:



The last set (6) of the London symphonies mark the culmination of an era of perhaps the greatest symphonist, certainly the most productive, of all time. During this period Haydn definitely establishes the separation of trumpet and horn, and the bassoons and celli from the contrabassi (No. 99/I). In the "Military" symphony (No. 100) he utilizes the so-called Turkish instruments (triangle, cymbals and bass drum) along with the regular kettledrums in his only symphonic work which calls for the large percussion section. His symphony No. 101 "mimics" the sound of a ticking clock in the slow movement. His next symphony (No. 102) is distinctive for his first use of muted trumpets (II/meas. 56), which adds through the use of the long, sustained note (c') — during which time the orchestra is silent, a new color in the orchestration and a new dimension to the instrumentation. No. 102 is also unique in that it is the only one of the last six symphonies of Haydn that does not contain parts for the clarinets. The unorthodox use of the timpani roll in the first measure sets symphony No. 103 apart as the "Drum Roll." The finale of No. 104 begins with the opening theme being supported by a sustained pedal in the horns and celli — a rare occurrence in the music of Haydn.

Other effective uses of instrumentation in his last works include the use of trumpets and kettledrums in the slow movements along with the other movements, which is contrary to Haydn's early practice. Trumpets are also divorced from the horn-type parts which call for the incessant doublings at the octave, and are given separate parts that are more characteristic of the instrument. His use of clarinet (in only six of 104 symphonies) is not too effective as he prefers to stay with the flute, oboe and bassoon for melodic and soloistic work. Perhaps it is as Gray says, "One always feels the Clarinet (in Haydn's symphonies) to be an unwelcome intruder in the family

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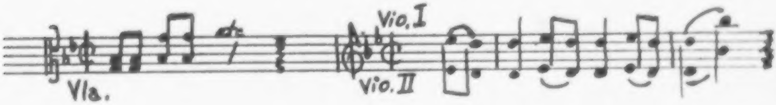
circle — the beautiful strange newcomer who brings trouble in the household."[7] In his solo writing for individual strings and woodwinds he shows periodically his love for single instruments, and through this style of composition, Haydn emancipated the woodwinds (excepting the clarinet) and helped toward the establishment of the basic woodwind choir.

As Truscott says, "No later symphonists have improved upon Haydn's position; no one can do more than equal him; even Beethoven, in some ways, scarcely surpassed him."[8]

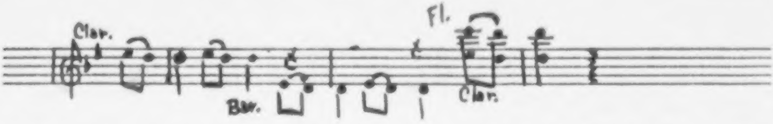
Mozart's first symphony (1794) was for the same instrumentation as Haydn's first: two oboes, two horns and strings with the strings assuming most of the melodic work. However, as Carse tells us, "in laying out his string parts, Mozart, even in his very early works, secured greater fullness than Haydn did by making more independent use of the tenor instrument (viola)."[9] He wrote for three- and four-part string sections very early in his career, while Haydn was still using the basic two- and three-part writing, and achieved a richer quality in the inner voices through a freer use of double-stopping and divisi viola.

It was during his visit to Mannheim (1777) that Mozart is said to have heard the refinements of orchestral playing for the first time. It was also the first time he had heard the clarinet and through his acquaintance with Anton Stadler (for whom he wrote the concerto and quintet), there followed almost immediately a greater use of that instrument. His "Paris" symphony, that followed his visit, was written in 1778 and was scored for his largest orchestra to that date: flutes, oboes, clarinets, bassoons, horns, trumpets, drums and strings. This is the start of the full "Classical" orchestra which is taking its final shape. Mozart also scored the winds in various combinations: flute and oboe, clarinet and bassoons, oboe and bassoon, oboe and horn, clarinet and flute — all heard melodically and harmonically as well as in larger six-eight part groupings, and often in quick alternation with the strings.

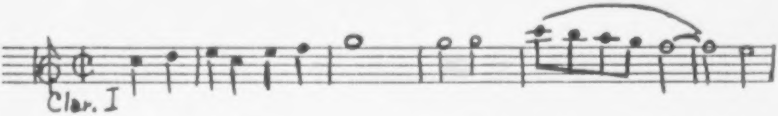
Mozart's symphony in G minor (No. 40) illustrates three elements of the use of instrumentation: The use of divisi violi in the opening measure and its use as a device which perhaps led to the minor sixth leap in the melodic line;



woodwinds are used in the three-note motive at the recapitulation of the first movement (meas. 260-265, 268-274);



the clarinet is scored on the subordinate theme of the fourth movement (meas. 85-101);



The above solo excerpt demonstrates his knowledge of the clarion register of the clarinet. He avoids the extreme altissimo range throughout the passage as well as purposely keeping the melody above the "break" thus avoiding the upper chalumeau (throat) tones that are weak and less musical.

Historians are inclined to attach labels to composers — sometimes referring to Mozart as an early Beethoven, Beethoven's first symphonies being "Haydnish," or Haydn being Beethovian in his later symphonies. However, one fact is rather certain — all started their symphonic careers by carrying on the tradition (and practices) of a predecessor.

Beethoven inherited from the eighteenth century standard forms, various wind and string combinations and colorations, a partial group of brasses and a rather complete string section. However, it was Beethoven who finally stabilized the woodwind section to a minimum of two instruments each in all of his symphonies. The instrumentation for Symphonies I, II, IV, VII and VIII is the same and listed below:

Flutes (2)
Oboes (2)
Clarinets (2)
Bassoons (2)
Horns (2)
Trumpets (2)
Timpani (2)
Violin I
Violin II
Viola
Violoncello
Double Bass

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To this basic instrumentation he added to his other symphonies through several innovations starting with the "Eroica" (No. 3). Not only was this work the longest symphony to date, but it was the first utilization of three horns in a symphony. The finale to the Fifth Symphony called for piccolo and contrabassoon with the former being used for soloistic work (meas. 73, 134, 142, 244, 329). The contrabassoon gives strength to the bass line.

The hesitant employment of trombones in a symphonic work is somewhat of a mystery inasmuch as they had been used in many opera orchestras before the nineteenth century: Monteverdi's "Orfeo," Gluck's "Alceste," Gossec's "Sabina," and Mozart's "Don Giovanni." Composers of religious works had also utilized the trombones for several centuries: Gabrieli's "Sacrae Symphoniae," throughout the Baroque period, and finally to Haydn who scored three trombones in his oratorio, "The Creation." However, it remained for Beethoven to establish the trombones as members of the symphony orchestra brass section when he scored them for the same finale (Fifth Symphony). He utilized the alto, tenor and bass trombones to augment the full tutti of the first note of the movement as the third movement does not pause, but rather moves continuously with a tremendous eight measure crescendo into the triumphant finale. The bass instrument is placed on a solid bass pattern here while the upper instruments are voiced in thirds and sixths through measure fifty. They are used as "fillers" with the horns (meas. 58 and 86), and the upper trombones are scored in unison with the bassoons (meas. 112-118). Although the score calls for a bass trombone, the range is well within a tenor trombone as the lowest note is the first line G. With the exception mentioned above, there is very little melodic writing for the trombones; however, performers on this instrument will be grateful to Beethoven for their inclusion into the world of symphonic literature.

The Sixth Symphony, in addition to being the first program symphony, also calls for the use of two trombones (and trumpets) in the fourth and finale movements. They are again used in thirds, sixths and in octaves in a sustaining-type of part. The piccolo is scored in the fourth movement. In the second movement ("By the Brook") Beethoven uses the flute, oboe and clarinet to "mimic" the sound of the nightingale, quail and the cuckoo.

In the Ninth Symphony Beethoven orchestrates the trombone section (mvts.: II and IV), piccolo (finale), and the establishment of the full horn section through his employment of four players. The trombones are used with the human voices in the fourth movement: the bass instrument with the men's voices along with cellos

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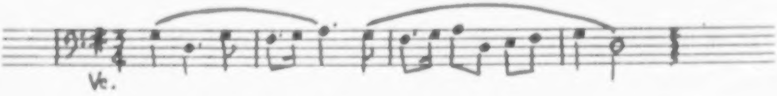
and double basses, while the alto trombone is used with the alto voice. The tenor also joins the activity as textures thicken in both chorus and orchestra. As a strange parallel or coincidence, Beethoven writes for the extra percussion (triangle, cymbals and bass drum) as well as the timpani just as Haydn did in one of his last symphonies (No. 100). As a final innovation he utilizes the human voice in the form of a solo baritone and solo tenor as well as the full chorus.

Beethoven's handling of the clarinet is notable. He uses the clarinets as tutti instruments in the First Symphony; he begins to combine them with bassoons in essential material in the Second; and in the Third ("Eroico") a solo clarinet is scored in melodic phrases as well as on essential harmonies. His trombone parts hold no distinction, although he did introduce them. His trumpet parts are no more progressive than earlier composers, while the horns and horn section grew to full bloom—from the First Symphony with no stopped notes to the fourth horn solo in the slow movement of the Ninth Symphony.

Through Beethoven and his contemporaries, and late works of Haydn and Mozart, "skeleton orchestration" (thinly scored works) disappears due to a greater use of solo instruments and their accompaniment groups, the addition of new instruments (trombones), the enlargement of established sections of the orchestra, the expansion of wind and string combinations and the more complex texture of the full tutti.

Another major improvement at this time was the continuing development of the violoncello as a solo instrument. The "Classicists" started it, Beethoven (in his "Eroica") gave the instrument a giant boost and Schubert extended the upper range and utilized it with other strings in much melodic writing. His secondary theme (No. 8/1), while not in the upper register, provides an exemplary passage:



The instrumentation during Schubert's nine symphonies did not change appreciably from Beethoven's, but his use of it did in several ways: (1) the use of solo clarinet and oboe proves his knowledge of their best lyrical range and quality, (2) string melodies are accom-

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paired by winds, while wind melodies are supported by unobtrusive string tone, (3) the trumpet is pulled further from the horn and becomes more closely aligned with the trombone, and (4) his employment of the trombone section displays more facility and harmonic exploitation than his contemporaries. It is unfortunate that his "Unfinished" symphony was not performed immediately (1822), rather than in 1865, so that the early composers could have benefitted from Schubert's expert and mature scoring technique.

"The nineteenth century owes much to Berlioz regarding the use of instruments for their particular tonal quality, and his ambitious and imaginative compositions have greatly influenced later composers such as Liszt, Wagner and Strauss."[10] His use of "color" instruments in the orchestra is bold and creative and reflected in the orchestra necessary for the performance of his "Fantastic Symphony" (1830):

Flutes (2)
Piccolo
Oboes (2)
English Horn
Eb Clarinet
C Clarinets (2)
Bassoons (4)
Horns (4)-5 crooks
Piston Cornets (G, Bb, & Eb)
Trumpets (2)-3 crooks
Alto Trombone
Tenor Trombones (2)
Tubas (2)
Kettledrums (4)
Chimes (C & G)
Snare Drum
Cymbals (hand & suspended)
Bass Drum
Harps (2)
Traditional Strings

For this large group (37) of winds and percussions, Berlioz called for a minimum string section of sixty players, distributed 15-15-10-11-9. The size of this orchestra contrasts greatly to the Esterhazy orchestra of Haydn's which seldom numbered more than 20-30 players. It is difficult to accurately depict "firsts" when discussing Berlioz' highly innovative use of instrumentation and scoring techniques, but the following, all from the "Fantastic Symphony," are among the first in use in major symphonies:

(1) Eb Clarinet ("Dream of the Witches Sabbath")
(2) English Horn ("Scene aux champs" — opening solo)
(3) The use of Cornets (military instruments)
(4) Four Bassoons (and other multiple winds)
(5) Two Tubas
(6) Two Harps ("The Ball")
(7) Four Kettledrums — 4 note chords ("Scene aux champs")
(8) Two Chimes ("Dream of the Witches Sabbath")
(9) Double Basses — playing in four parts.

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Fennell[11] tells us that Berlioz was the first composer to indicate in his scores the sticks with which he expected the player to produce the desired sound from all his percussion instruments. He also reveals that the first indication for a separate suspended cymbal to be struck with a stick appears in the final chord of the "Fantastic." Berlioz also wrote works which utilized great masses of sound including the "Requiem" with its huge chorus, an orchestra of 140 players, four gongs, sixteen kettledrums, ten pairs of cymbals and four brass choirs totalling thirty-seven players; however, his fame as a conductor rests on his first three symphonies, and particularly — the "Fantastic Symphony." His radical and innovative creations mark him as a leader in orchestration, conducting, music with programmatic content and instrumentation throughout the Romantic period.

Richard Wagner, while not a symphonist (he wrote the first movement to his "Faust" symphony), did much to bring greater depth to orchestral instrumentation. His additions to the orchestra at Bayreuth[12] are as listed below:

Flutes (3-the third doubling piccolo)
Piccolo (separate)
Oboes (3)
English Horn (doubles as 4th oboe)
Clarinets (one doubles Eb-3 total)
Bass Clarinet
Bassoons (3)
Contrabassoon

Kettledrums (4)
Triangle
Cymbals (2-hand and suspended)
Snare Drum
Glockenspiel
Harps (6)

Horns (8-4 of which double 2 tenor tubas in Bb, and 2 bass tubas in F)
Contrabass Tuba
Trumpets (3)
Tenor Trombones (2)
Bass Trombone
Contrabass Trombone (dbl. bass trombone).

Violin I (16)
Violin II (16)
Viola (12)
Violoncello (12)
Double Bass (8)

This orchestra is significant for many reasons, but one of the most significant is its emphasis on the lower instruments of each section. As Richard Strauss extended the upper wind instruments later, Wagner emphasized the downward range of all winds. The tubas which bear his name, are an extension of the horn section and retain the following features common to the horn: (1) they used the same funnel-shaped mouthpiece which enabled the last four hornists to "double," and (2) they were of small bore, conical and equipped with four valves. This master of music drama was also responsible for inclusion of the large trombones in orchestra instrumentation as Carse relates, "A contrabass trombone in BBb or CC, a revival of the old *octav posaun* of Praetorius' time, was called into life again mainly by Wagner's demand for such an instrument."[13] It should be noted that German trombones of the Romantic period produced a heavy tone in contrast to the brighter and more penetrating sound of the French instrument.

Anton Bruckner wrote nine symphonies which are described by Grout [14] as being best understood as the expression of a profound, unquestioning religious spirit. His symphonic works are generally of great length and require a larger (mostly brass) orchestral instrumentation. He utilizes a "stage" band of brass (3 trumpets, 3 trombones, 4 horns and tuba) in addition to the normal brass section for his Fifth Symphony (1875-1878). In contrast, his first symphony includes two trumpets and three trombones with no tuba. Perhaps his most played symphonic work (No. 7), is scored for three trumpets, three trombones, four horns and four tubas. The Wagner tubas were also included in the slow and finale movements of his last two symphonies as well as the Seventh. Bruckner was overshadowed by Brahms, although his orchestration was better handled — at times seemingly stronger than the melodic material.

The last thirty years of Wagner's life saw the rise of another generation of composers whose mature works appeared approximately during the last thirty years of the nineteenth century. This group includes Bruckner, Dvorak, Franck, Saint-Saens, Borodin and Brahms who, perhaps is the greatest symphonist of this era. However, his conservative use of instrumentation as demonstrated in the scores of his four symphonies marks a backward step in both instrumentation and orchestration.

In regard to the orchestra, Brahms uses the instrumentation of Beethoven's Ninth Symphony with the addition of a tuba in the Second Symphony and a third drum (timpani) in the E minor symphony (third movement only). His woodwinds include pairs of flutes, oboes, clarinets and bassoons throughout all the four symphonies. The contrabassoon is used spasmodically to strengthen the bass line. It invariably doubles the second bassoon an octave lower or plays in unison with other contrabass instruments. He does not make use at any time during the four symphonies of the English horn or bass clarinet, and the piccolo is used for only one movement (No. 4/III). The bassoon is the work horse of Brahms' family, combining with the strings as well as the woodwinds. Although the bassoon is primarily a bass clef instrument, Brahms occasionally scores brief solos for it. A good example of this would be in the First Symphony, first movement (meas. 197) where the bassoon is accompanied by the full string section.

The clarinet appears to be the favorite instrument as numerous solos are allotted to it: No. 1/III, No. 3/II, and No. 4/II. These are all statements of the main themes. He utilizes all registers from the top of the range to the bottom. The oboe is used throughout all the four symphonies in brief solo passages — a good example is in the First Symphony (II/meas. 38-46). The flute is used very little as a solo instrument, although Brahms makes almost constant use of he instrument. The two flutes are voiced mostly in Brahms' favorite thirds or sixths, although many octave passages may be found.

The brass takes a minor role in Brahms' four symphonies, in contrast to his contemporaries (Bruckner, Strauss, Mahler) who were enlarging the section. The trombones are not used to full advantage. They are used only once in both the E minor and C minor symphonies (finales). Brahms scores for two trumpets mostly in he low to middle registers. He uses the tuba in only one symphony (No. II) and in only three movements. The timpani are used in heir time-honored function of marking accents, providing rhythmic background, and building tension with long rolls. The only variaion in the percussion is found in Symphony No. 4/III, where the riangle and a third drum are added.

The technique in which Brahms utilized his horns was rather unusual in that he "confined himself to writing horn and trumpet parts that could be played on natural instruments, yet wrote freely open and stopped notes — including the 'bad notes' — and evidence ndicates he did not intend the parts to be played on the hand horn."[3] Horns are scored often in the low register and contribute o the thickness of which Brahms is so often accused.

Brahms seems to have adopted one of the less attractive feaures of Schumann's orchestra technique, a kind of semi-tutti composed of woodwinds and strings. The groups seldom appear in clear ontrast to each other and this tends to produce a rather monotonous imilarity of texture in all his symphonies. While there are passages where Brahms achieves a light and delicate touch, as in the trio (No. 2/III), these are an exception and come as a welcome relief rom the almost constant combination of woodwind and string. In utti passages most of the strings are doubled in the woodwinds, and

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the melodic line is seldom carried in a single instrument or color. Brahms uses the full orchestra in the first and last movements of the four symphonies, scoring the inner movements for reduced orchestra, and the latter are more interesting from the viewpoint of scoring.

Brahms' dullness of orchestration is certainly not a result of incompetence as it is highly improbable that a man as self-critical and as painstaking as he is pictured by his biographers would attempt the symphonic field without thoroughly preparing himself, both in musical material and the means of expression. That he waited so long before he published his first symphony seems to bear this out. Perhaps the most startling realization in a discussion of Brahms is that regardless of his scoring shortcomings, and lack of aggressiveness in accepting the new development in instrumentation or the enlargement of existing instrumental sections of the orchestra, his symphonies have increased in popularity through the years.

Gustav Mahler was the last of the great Viennese symphonists who date back to Joseph Haydn. Mahler did much to add color to symphonic instrumentation through simple augmentation in each section except the strings, and even here he scored the violoncelli in two parts and the contrabassi in three parts (No. 1/I). A great majority of his movements begin with a small chamber group, sometimes strings or woodwinds and sometimes combined. He can be compared to Schubert in his gift of melody and this quality is transferred to the individual instruments in an abundance of soloistic passages throughout the entire orchestra.

Symphony No. 1 utilizes a slightly larger instrumentation than that of his contemporaries: Woodwinds and trombones in groups of three, four trumpets, tuba, strings and a large section of horns (7). The percussion section includes triangle, cymbals, bass drum, four timpani and harp. According to Cardus "the seven horns merely shared or extended the practice of Richard Strauss . . . "[16]

Each of Mahler's first three symphonies show a gradually expanding instrumentation with the addition of one or more players to several sections. The third symphony utilizes six timpani with two players, gong, side drum, two types of cymbals, cornet, eight horns, four trombones, glockenspiel, contrabassoon and contrabass tuba. His remaining symphonies were all completed during the twentieth century.

It is interestng to compare Mahler's instrumentation, noting the growth and development, between his first and eighteen symphonies, the latter called the "Symphony of a Thousand."[17]

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SYMPHONY NO. 8 (1907)

Piccolo
Flute (4)
Oboe (4)
English Horn
Eb Clarinet
Bb Clarinet (3)
Bass Clarinet
Bassoon (4)
Contrabassoon

Violin I
Violin II
Viola
Violoncello
Double Bass

Soprano-Alto (4 parts)
Tenor-Baritone
Bass Soloists
Mixed Chorus (2)
Boys' Choir

Horn (8)
Trumpet (4)
Trombone (4)
Tuba

Bass Drum
Cymbals
Gong
Triangle
Chimes
Celesta
Glockenspiel
Timpani
Harmonium
Piano
Organ
Harp (2)

Mandolin
Fanfare Group:
Trumpets (4), Trombones (3)

Mahler exploited new colors in the orchestra through the use of new instruments: organ, hammer, guitar, harmonium, tenor horn, gong, tambourine and cowbells. He also made great use of vocal soloists and vocal choirs with the orchestra.

It seems that many authorities agree that Mahler was a master orchestrator: "In his sense of color Mahler ranks with the great masters of the art of orchestration."[18] "Such an overwhelming quantity of tone, such a wealth of colour, combined, in the hands of a thoroughly practical man — could hardly fail to produce orchestration which is striking and impressive."[19] And finally, "Mahler is one of the most adventuresome and most fastidious of composers in his treatment of instrumental combinations, comparable in this respect perhaps only with Berlioz."[20]

Mahler's Tenth Symphony (1909-1910)is unfinished and constitutes his shortest work (25 minutes) in this form. His instrumentation for these two movements definitely indicate a return to the smaller orchestra:

Flute (3)
Oboe (3)
Clarinet (3)
Bassoon (3)

Cymbals
Gong
Timpani
Harp

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Horn (4)
Trumpet (4)
Trombone (3)
Tuba

Violin I
Violin II
Viola
Violoncello
Double Bass

As a final observation of the Mahler symphonies, the above score reveals parts for Bb clarinets and trumpets, horns in F, BBb tuba and trombones scored in the bass clef — the full realizaiton of the present-day wind instruments.

CONCLUSION

The nineteenth century was an age of wind instruments. The large majority of contemporary orchestral winds were developed during the Romantic period and affected changes in composition, scoring techniques and orchestral instrumentation.

The evolution of symphonic instrumentation is in one sense, a revolution as we have witnessed the early orchestra of Haydn, with its dependence upon the string section, develop into the powerful symphony orchestra of the post-Romanticists with its complete instrumentation in all sections. This shifting of emphasis from strings to winds, while not diminishing the major role of the strings, gradually created during the Romantic period a performing group capable of remarkable balance.

FOOTNOTES

1. Willi Apel, *Harvard Dictionary of Music* (Cambridge: Harvard University Press, 1966), 521.

2. Percy M. Young, *Symphony* (Boston: Crescendo Publishers, 1968), 30-31.

3. Frederick Fennel, *Time and the Winds* (Kenosha, Wis.: G. Leblanc Company, 1954), 9.

4. Willi Apel, *Harvard Dictionary of Music* (Cambridge: Harvard University Press, 1966), 521.

5. Cecil Gray (Ed. Ralph Hill), *The Symphony* (London: Penguin Books, 1954), 184-185.

6. Adam Carse, *The History of Orchestration* (New York: Dover Publications, Inc., 1964), 184-185.

7. Cecil Gray (Ed. Ralph Hill), *The Symphony* (London: Penguin Books, 1954), 49-50.

8. Harold Truscott (Ed. Robert Simpson), *The Symphony* (London: Pelican Books, Vol. I, 1966), 49.

9. Adam Carse, *The History of Orchestration* (New York: Dover Publications, Inc., 1964), 185.

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10. Willi Apel, *Harvard Dictionary of Music* (Cambridge: Harvard University Press, 1966), 521.

11. Frederick Fennell, *Time and the Winds* (Kenosha, Wis.: G. Leblanc Company, 1954), 19.

12. Frederick Fennell, *Time and the Winds* (Kenosha, Wis.: G. Leblanc Company, 1954), 23.

13. Adam Carse, *Musical Wind Instruments* (New York: Da Capo Press, 1965), 260.

14. Donald Jay Grout, *A History of Western Music* (New York: W. W. Norton & Company, Inc., 1960), 543.

15. P. A. Browne, *Brahms, the Symphonies* (London: Oxford Press, 1933), 11.

16. Neville, Cardus, *Gustav Mahler: His Mind and His Music* (New York: St. Martin's Press, 1965), 38.

17. Willi Apel, *Harvard Dictionary of Music* (Cambridge: Harvard University Press, 1966), 521.

18. Joseph Machlis, *Introduction to Contemporary Music* (New York: W. W. Norton & Company, 1961), 78.

19. Adam Carse, *A History of Orchestration* (New York: Dover Publications, Inc., 1964), 332.

20. Donald Jay Grout, *A History of Western Music* (New York: W. W. Norton & Company, 1961), 572.

BIBLIOGRAPHY

Books

Apel, Willi. *Harvard Dictionary of Music*. Cambridge: Harvard University Press, 1944.

Browne, P. A. *Brahms, The Symphonies*. London: Oxford Press, 1933.

Cardus, Neville. *Gustav Mahler: His Mind and His Music*. New York: St. Martin's Press, 1965.

Carse, Adam. *The History of Orchestration*. New York: Dover Publications, Inc., 1964.

__________. *Musical Wind Instruments*. New York: Da Capo Press, 1965.

Crocker, Richard L. *A History of Musical Style*. New York: McGraw-Hill Book Company, 1966.

Erb, J. Lawrence. *Brahms*. rev. ed. New York: E. P. Dutton & Company, Inc., 1934.

Fennell, Frederick. *Time and the Winds*. Kenosha, Wis.: G. Leblanc Company, 1954.

Grout, Donald Jay. *A History of Western Music*. New York: W. W. Norton & Company, Inc., 1961.

Hill, Ralph. *The Symphony*. London: Penguin Books, 1954.

Jacob, Gordon. *Orchestral Technique*. London: Oxford Press, 1940.

Kamien, Roger. *The Norton Scores*. New York: W. W. Norton & Company, Inc., 1968.

Kennan, Kent. *The Technique of Orchestration*. Englewood Cliffs, N. J.: Prentice Hall, Inc., 1952.

Landon, H. C. Robbins. *The Symphonies of Joseph Haydn.* New York: The Macmillan Company, 1956.

Machlis, Joseph. *The Enjoyment of Music.* rev. ed. New York: W. W. Norton & Company, Inc., 1963.

____________. *Introduction to Contemporary Music.* New York: W. W. Norton & Company, Inc., 1961.

Nettl, Paul. *Beethoven Encyclopedia.* New York: Philosophical Library, 1956.

Sachs, Curt. *The History of Musical Instruments.* New York: W. W. Norton & Company, 1940.

Schwartz, H. W. *The Story of Musical Instruments.* Elkhart: Pan-American Band Instruments, 1938.

Simpson, Robert. *The Symphony.* Baltimore: Penguin Books, 1966, Vol. I.

____________. *The Symphony.* Baltimore: Penguin Books, 1967, Vol. II.

Wier, Albert E. *Famous Individual Symphonies in Score.* New York: Bonanza Books, 1937.

____________. *The Nine Symphonies of Beethoven in Score.* New York: Bonanza Books, 1935.

____________. *The Symphonies of Brahms and Tchaikowsky.* New York: Bonanza Books, 1935.

Young, Percy M. *Symphony.* Boston: Crescendo Publishers, 1968.

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The Integration of Music Learnings in Junior High School Choral Class

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INTRODUCTION

In recent years, a great amount of concern has been expressed by music educators for the lack of actual music learning taking place in the choral and instrumental performing groups in the secondary schools. The major emphasis of performing group programs has been directed toward performance skill development rather than the learning of subject matter. Too many choral groups have concentrated on providing entertaining performances rather than in seeing that music learning takes place in the rehearsal room.

Because music has long since won a place in the curriculum of the schools, music educators can now afford the luxury of self-examination to determine to what extent music learning is taking place. A generation ago, music was thought of as a means to an end. Dykema and Gehrkens declared, "The teacher teaches children through music."[1] The statement indicates that music is used to achieve a goal which is more worthy than the benefits of music itself. Today, the thinking has changed to indicate that music has become not only a means to an end but also an end in education. Many educators are advocating that music should be studied for its own aesthetic qualities.[2]

In order to justify any subject area, including music as an integral part of the total school curriculum, Warner suggests the following criteria: (1) The subject area must consist of a structural curriculum based on a comprehensive philosophy which will provide a systematic theory from which to evaluate educational practice. (2) Observable and measurable behavioral changes should take place which are consistent with and supportive of the goals of the educational institution.[3]

While music has found a place in the curiculum, it is not recognized as a subject which fully meets currently acceptable educational goals. This is evidenced by the fact that in many states, choral music is given less credit per year than any other subject areas. In many school systems, choral music is given only ½ unit of credit per year while other subject areas which meet on a daily basis as does music, receive a full unit of credit per year. There are also other reasons which may account for this lack of recognition of music on a par with other subject areas.

Warner explains music's unusual position in the curriculum in the following manner:

> Music educators . . . have failed to unite under a common philosophy, a systematic theory, and a practice which could clarify the mystery of how music contributes to the development of the total child. Music educators, in their effort to forge their way into the mainstream of the curriculum, have developed a defensive mentality which springs from a pre-occupation with *image*, one of superficially justifying their programs to the students, parents, and administration. As a result, music educators have leaned heavily toward emphasizing the obvious, readily observable products in order to sell their respective programs.[4]

Warner continues his explanation of the dilemma of the traditional music program:

> Expediency, in the guise of flexibility, has become the dominating principle guiding most music programs throughout the country. As a result, music educators find themselves confronted with fragmented and often contradictory philosophies and practices which have little value . . . Most traditional . . . programs today are a conglomerate of highly unique programs which have little philosophical direction other than to favorably compete with their rival schools in the country. The sole criteria for evaluating the quality of that . . . program is musical performance, musical performance most often occurring in the context of an entertainment setting.[5]

When music is taught as a subject area in the performing choral class, the question often arises as to the effect this change in curriculum content will have on the groups' performance. If the subject matter is presented in integral relation to the music being performed, it should make performance better, not detract from it. Initially, performance may suffer as time normally spent in rehearsing the group may be utilized in teaching music learnings. However, as the students develop genuine musical competence and understanding, this additional knowledge should be reflected in their performance. Although less time will be available for actual rehearsing of the groups, less time should be needed to attain the same level of performance prior to the change in curriculum content because of the added competence of the students in the group.

The selection of music to be used in the performing choral class with its broadened emphasis requires the establishment of new criteria. The older criteria would still be utilized:

> Is the music's degree of technical difficulty appropriate in terms of performing ability?
>
> Is the music suitable and desirable for either teaching essential techniques of playing and singing (as for beginning classes) or for use on public programs?[6]

The new criterion would be:

> Is this music of superior value in teaching the subject matter of music?[7]

If the above-mentioned criteria are utilized in the selection of music, and music learning takes place in the performing choral class, then performance of the group should improve rather than suffer.

One problem that must be solved in making music learnings available to performing groups is that of new students enrolling in the performing group each semester. The presence of new students each semester disturbs an effort to build musical concepts in a continuing manner. The best possible solution would perhaps be a flexbility in scheduling. Such a schedule will make it more possible, in a performing ensemble, to meet the varying needs of students with divergent abilities.

This paper is concerned with the implementation of a program at the junior high school level for the purpose of developing an exemplary curriculum which will emphasize the teaching of comprehensive musicianship in the context of a performance program. It is hoped that this program will elicit a broader perspective of musical growths than what would normally be expected from a traditionally structured choral program.

Specific Areas of Music Learnings

The design of the kind of curriculum which is necessary for the integration of music learnings in the choral class should be such so as to insure that the fundamental organizational elements found in music are extracted, identified, reorganized, and placed back in the context of the whole so as to bring about an effective working knowledge in that area.[8] An effort should be made to focus on each dimension of music singularly or in combination with other dimensions within a student's musical experiences in order that they have valid meaning to him. There should be a constant reinforcement of music learnings in many different musical settings which "should make it possible for the student to move from one musical context to another as an independent discoverer with an ability to make judgments as to quality, assist his feelings toward a piece of music, and make predictions as to what meaning it would have to him in the future."[9]

In the teaching of music, it is incumbent on the teacher to consider four main areas:

> (1) What to teach — the content to be taught; what to teach must be precisely what should be learned. What should be learned in music at a given time is that part of the content of music which is appropriate to the experience, ability, and needs of the pupils at the particular time.
>
> (2) The organization of that content for instructional purposes; it has been said that teaching is the organization of learning. In general, learning outcomes can be organized in terms of three major classifications: (a) Facts, knowledge, concepts; (b) Habits and skills; and (c) Attitudes, ideals, appreciations, judgments of value.
>
> (3) How the content is to be taught — in other words, how it is learned; how music is to be taught should be completely consistent with how it is to be learned. The next step in organizing the learning process, therefore, is to determine and plan the activities in which the pupils will engage in order to learn what you have decided they should learn.
>
> (4) The role of the teacher in this process. Having done all of the foregoing, the function of the teacher now is to select repertoire for study, to provide necessary instructional materials including those required for independent study on the part of gifted or academically talented pupils . . . and to motivate and guide the activities of the pupils in such a way that they will do what they need to do in order to learn what he wants them to learn."[8]

The skillful teacher will consistently use evervthing he knows about motivation to make certain that learning activities are motivated at the highest level; he will be aware of the technical limitations of his pupils; in listening lessons the musical experience and maturity of pupils will be a consideration; he will recognize the individual differences among students.

The specific music learnings which are to be taught to the junior high school choral class are outlined as follows:

STRUCTURE — The relationships and interrelationships of the musical elements.

Pitch arrangement — The ability to recognize the highness or lowness of pitch, the recognition of pitch organization; intervalic relationships, major, minor, or other scale patterns and phrase structure.

Rhythm — Meter and tempo; perception of the organization of music in respect to time.

Dynamics — The perception of loud and soft in a piece of music.

Timbre — The recognition of tone colors resulting from the use of varoius combinations of instruments and/or voices in a musical composition.

Harmony — The simultaneous occurrence of two or more tones; their structure, functions, and relationships.

STYLE — The manner in which a composer treats form, melody, rhythm, counterpoint, harmony and tone color. Compositions written in a particular period, in a particular genre and by a particular composer provides the material for the history of the style of that period, genre or composer.

FORM — The scheme of organization that determines the basic structure of a composition and the derivation of the whole piece from a relatively restricted nucleus of material.

HISTORY — The development of Western music. The above-listed elements are categorized according to periods — Renaissance, Baroque, Classical, Romantic, and Modern.

The incorporation of the above-mentioned dimensions of music into the musical experiences of a performing group should certainly improve the performance of that group. As an example, a group that has been taught musical style should have a better conception of various performance practices. Many performing groups perform a Palestrina madrigal in the wrong manner, while many of those groups that do perform his madrigals correctly, have no idea there should be no accents on the first beat of each measure in each part simultaneously. An understanding of the basic concept in the performance of this sixteenth century form tends to contribute to a better performance of it.

It must be reiterated that the music literature utilized in a program incorporating music learnings in the musical experiences of a performing group is of the utmost importance if this kind of program is going to succeed.

Van Bodegraven has aptly summed up the importance of the teacher developing a sense of discrimination in the selection of music:

> (1) Curricular experiences should be selected from those which best serve musical goals, and in this connection it should be remembered that the stature of a musical activity is inevitably liked to its repertoire.
>
> (2) The starting point for all curricular activities should be the selecton of a wide variety of the most significant musical literature of the past and present.
>
> (3) The literature so selected should be used as the basis for a carefully planned program aimed at the development of musical understanding and discrimination.
>
> (4) Performing groups . . . should adopt a three- or four-year revolving basis repertoire representing the most significant literature available and covering all periods of music so as to bring some degree of uniformity in musical experiences being offered to participants."

A Teachng Unit Integrating Music Learnings

The objectives of this unit is to integrate two specific music learnings, music history and harmony, into the choral warm-up. The chorus consists of seventh, eighth, and ninth graders, and rehearses an hour daily. While using the chorale "Sleepers 'Wake" by J. S. Bach as a warm-up number, the chorale will be discussed both historically and harmonically. It is hoped that the members of the chorus will develop a better understanding and appreciation of the chorale in particular and music in general while preparing their voices for rehearsals.

Since people learn by doing, and since students at this age desire activity, it is important to start the rehearsal by having the chorus sing the chorale in its entirety before any type of discussion is begun. At this point, the chorus is asked to sing the chorale again from the beginning to letter "C." While doing so, the students are asked to listen carefully to see if they can remember hearing music of this type, and if so, where. It is hoped the response will be one in which someone states that the music sounds like a hymn which is sung in church.

Now that the students have been encouraged to listen to and think about the music, this is an opportune time to relate some meaningful historical information about the chorale.

The discussion would follow in this manner. "The chorale which you have just sung is the German equivalent of the familiar English

Protestant hymn which many of you have probably sung in church. How many of you are Catholic? How many are Lutheran? Back in the sixteenth century, a German, who was trained as a monk in the Catholic Church, Martin Luther, revolted against Church authority and Church abuses. This revolt, which became known as the Protestant Reformation, spread to Switzerland and France.

"Luther had strong convictions about the importance of music in religion. Since the end of the sixth century, only the priest and choir spoke and sang in Latin in the Catholic Church. The Reformation stressed democratic principles of worship: the worshiper himself was to participate in the service as much as possible. The worshiper was able to take a more active part in the service because German was substituted for Latin and the music was of a sort to be sung by the congregation. Congregational participation gave birth to a great body of religious song, called chorale. Chorales were sung by the congregation, sung in parts by the choir, and at a later time they were played on the organ.

"The words of the chorales were adaptations of old hymns or were written by contemporary poets. The music came from several sources: (1) rearranged from hymns of the Catholic Church; (2) original chorale melodies were composed by Protestant musicians; (3) secular melodies were employed with religious texts.

"Boys and girls, are the hymns of the Lutheran Church sacred or secular? (Answer: sacred). What do I mean by sacred music? (Answer: religious music). What do I mean by secular music? (Answer: music that is not religious). The chorale is strong and masculine, and even when it is most expressive, it never loses its devout religous feelng. Because the chorale melody has a limited range, eveness of rhythm and melodic progressions, it is easily singable.

"Now, the sopranos are to sing their part from the beginning to the first fermata. 'As you probably realized, that is the melody.

"J. S. Bach, the man who harmonized (wrote the chords) this particular chorale melody, arranged a lot of chorales as short organ pieces known as chorale preludes. The chorale prelude originated as an improvisation by the organist on the hymn the congregation was to sing. The chorale is from the chorale cantata of the same name, No. 140. A chorale cantata is a short religious drama in verse, without action, and makes use of soloists, instrumental sections, and sometimes a chorus."

After this discussion of the historical aspects of the chorale, the chorus will sing through the chorale in its entirety. In subsequent rehearsals, the students will be asked questions such as, "Who is Martin Luther?" "What connection does he have with the chorale you have just sung?" "What changes did Martin Luther encourage in the church service?" and "What is meant by 'secular'?"

In the meantime, the Bach chorale being used for warm-up purposes, offers an excellent opportunity to teach another form of musical learning — harmony. Before the rehearsal class begins, the E-flat scale in both the treble and bass clefs are written on the blackboard. Each note of the scale is numbered 1 through 8.

The presentation will proceed in the following manner. "Sing through the chorale from beginning to end. Today, we are going to learn about the notes that are sung while the melody is being sung. The sopranos will now sing from the beginning to the first fermata. This is called the melody in this number. Now, will all the other voices who did not sing the first time, sing from the beginning to the first fermata? Will everyone now sing the same measure together? These notes that were sung along with the melody are called chords. Chords consist of two or more notes sung simultaneously. Harmony is the structure, function, and relationship of these chords you have just sung.

"In our music, we use what is called Tertian harmony. This is a harmonic system based on the interval of a third. Now let me explain a little further. An interval is the distance between two notes. The names of the intervals refer to the number of scale steps from the lower to the higher note.

"Now direct your attention to the blackboard. I have an E-flat scale written in both the treble and bass clefs on the board. The sopranos and altos will be concerned with the scale in the treble clef while the tenors and basses will use the scale written in the bass clef. Since each scale has eight tones, each note of the scale has been numbered one through eight. If we determine the size of an interval by counting from the lower note to the higher note, then an interval of a third would be from 1 to 3. Sopranos, if the lower note is E-flat, what note above makes an interval of a third? (Answer: G). All sopranos and altos will now sing the two notes of this interval, giving each note two beats. Tenors, if your lower note is G, then what higher note makes an interval of a third? (Answer: B-flat). Tenors and basses sing the notes of this interval in the same manner that the sopranos and altos did. Since our harmony is based on Tertian harmony, as we said earlier, then our chords are built on thirds. Altos, if we want three tones in our chord, and the lower tone is E-flat, what are the other tones of the chord? Remember, the notes are a third part. (Answer: G and B-flat; 3 and 5). All sopranos will sing, at my direction, the top note in the scale of E-flat. The altos will sing the fifth tone of the scale. The tenors will sing the third tone of the scale while the basses sing the first tone of this scale. Boys and girls, you have just sung a chord. Since the bottom note or the root as we call it, is the same as the name of the key, this chord is called a tonic chord.

Sopranos, see if you can answer this question. Do the first three notes of the melody of this chorale look familiar? You are correct. They are 1-3-5. What is another name for these notes when sung as a chord? (Answer: Tonic). All the other voices in the chorus, sing the very first note of the chorale and hold it while the sopranos, who have the melody, sing their first three notes in the melody. Listen carefully. Do those three notes in the melody sound pleasing with the other notes?"

In subsequent rehearsals, the students would be introduced to the sub-dominant and dominant chords in the same manner. Great care must be taken to make sure that the students understand that the chords are built on thirds and that the correct step of the scale is used to form the root of the chord.

After the students have been introduced to the dominant chord, we would then examine the chord in measure five of the chorale. This would be done in the following way. "Students, compare the chord built on the fifth step of the scale with the chord in measure five. Now, everyone sing the note you have in the fifth measure. Does the chord contain the same notes as the chord built on the fifth step of the scale? (Answer: Yes)."

After the tonic, sub-dominant, and dominant chords have been built properly and examined in the chorale, then the chorus will be introduced to modulation. The purpose here is not to go into the mechanics of modulation but to train the ear to hear the change of tonality.

This musical learning will be introduced in this way. "Chorus, begin singing four measures after letter 'F' and sing to the second fermata. Listen carefully and see if you can detect any change. Did you notice anything different? Here, the composer goes to another key. When we change keys, we call this device 'modulation.' Now start at the same place and sing to the end. Listen carefully as you sing, for you will be asked another question. At the end, does the chorale remain in the new key or modulate back to the old key? (Answer: modeulate back to the old key). Sing the same sections again and listen to the two changes in tonality."

Both of the musical learnings in this unit, the history and the harmony, would be reviewed consistently in an attempt to make sure all the students understand these facts in relationship to the music being sung. With an introduction to modulation, this would

end the presentation of harmony, and thus end the unit. In subsequent units, an attempt will be made to increase the historical knowledge and broaden the harmonic concepts of the students so that they may understand and appreciate all music more fully.

As a means of evaluating the teaching and the learning in this unit, a short test will be given on the music history involved. Also, each student will be required to write the tonic, sub-dominant, and dominant chords in three designated keys. In addition, each student will be required, after a considerable amount of practice, to attempt to identify each of the three chords by ear.

CONCLUSIONS

The question is often asked, "Why should instruction in music be included in a tax-supported, comprehensive program of education?" The response usually found in curriculum guides almost invariably include these three answers:

> (1) A music program promotes school and community spirit and helps to establish good public relations.
>
> (2) Music is a means of personality development through its emphasis on creative expression.
>
> (3) Music provides an opportunity for the development of good citizenship and an understanding of our democratic way of life."

The various arguments for music which were used in years gone by, while they may have served their purpose, have long since ceased to express present day intentions in an educational atmosphere so different from the period prior to the 1950's. It has become quite obvious "that many claims made for music during that era are difficult, if not impossible, to sustain; and that the great variety of non-musical grounds used to justify the inclusion of music in the schools actually makes it possible to measure the success of a music program in non-musical achievements.'"[1]

There has been a growing concern of the lack of musical learnings taking place in a curriculum made up entirely of performing groups. The objectives of music have been defined in such broad terms that it is extremely difficult to measure the degree of success music educators have had in achieving them. Usually, the music educator does not know how well the student has learned to sing; he does not know what literature the student has performed, nor what the student has learned about music.

It is the concensus of opinion among many educators today that the program of music education has matured to a point where there should be a core of specific and measurable outcomes of experiences in all phases of music and that the outcomes should be common to all students. Such a core of specific and measurable outcomes will be realized only when there is general agreement concerning the important objectives of music education.

Van Bodegraven seems to point the way when he stated:

> Evaluation of all musical activities should be based primarily on the achievement of goals directly related to music. Peripheral benefits which might accrue would be gratefully recognized and accepted as added dividends. If experience with music does indeed produce such peripheral values (and I believe it does) it would seem they could best be achieved by placing primary emphasis on significant musical experiences."[14]

FOOTNOTES

[1] Peter W. Dykema, and Karl W. Gehrkens, *The Teaching and Administration of High School Music* (1941), pp. 380-81.

[2] Charles R. Hoffer, *Teaching Music in the Secondary Schools* (1964), p. 409.

[3] Roger W. Warner, "The Design of an Innovative Instrumental Music Curriculum Based on the Perceptual and Conceptual Approach to Teaching Comprehensive Musicianship in the Band Program," (1969), p. 2 (Mimeographed).

[4] *Ibid.*, p. 3.

[5] *Ibid.*, p. 3.

[6] Robert E. Nye, "Some Thoughts and Theories About Secondary School Music," quoted in Hoffer, *op. cit.*, p. 422.

[7] *Ibid.*, p. 422.

[8] Warner, *op. cit.*, p. 9.

[9] *Ibid.*, p. 9.

[10] William C. Hartshorn, "The Teaching of Music," ed. Bonnie C. Kowall, *Perspectives in Music Education* (1966), pp. 212-16.

[11] Paul Van Bodegraven, "Music Education in Transition," ed. Kowall, *op. cit.*, pp. 35-36.

[12] Paul Van Bodegraven, *op. cit.*, p. 31.

[13] *Ibid.*, p. 32.

[14] *Ibid.*, p. 35.

BIBLIOGRAPHY

Books

Bessom, Malcolm E. *Supervising the Successful School Music Program.* West Nyack, New York: Parker Publishing Company, Inc., 1969.

Cooper, Irvin, and Karl O. Kuersteiner. *Teaching Junior High School Music.* Boston: Allyn and Bacon, Inc., 1965.

Henry, Nelson B. (ed.). *Basic Concepts in Music Education,* Fifty-seventh Yearbook of the National Society for the Study of Education, Part I. Chicago: University of Chicago Press, 1958.

Hoffer, Charles R. *Teaching Music in the Secondary Schools.* Belmont, California: Wadsworth Publishing Company, Inc., 1964.

Kaplan, Max. *Foundations and Frontiers of Music Education.* New York: Holt, Rinehart and Winston, Inc., 1966.

Kowall, Bonnie C. *Perspectives in Music Education,* Source Book III. Washington, D. C.: Music Educators National Conference, 1966.

Morgan, Hazel Nohavec. *Music Education Source Book.* Chicago: Music Educators National Conference, 1949.

Palisca, Claude V. *Music in Our Schools.* A Report of the Yale Seminar on Music Education. Washington: United States Department of Health, Education, and Welfare, Office of Education, 1964.

Snyder, Keith D. *School Music Administration and Supervision.* Boston: Allyn and Bacon, Inc., 1965.

Werder, Richard H. *Music Skills.* Proceedings of the Workshop on Music Skills conducted at The Catholic University of America, June 14 to 25, 1957. Washington, D. C.: The Catholic University of America Press, 1958.

Unpublished Material

Warner, Roger W. "The Design of an Innovative Instrumental Music Curriculum Based on the Perceptual and Conceptual Approach to Teaching Comprehensive Musicianship in the Band Program." Pilot Experimental Program, University City Senior High School Band. University City, Missouri, 1969.

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A Summary of the Evolution and Development of the Cadenza In the Violin Repertory Through the Use of Examples

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PREFATORY NOTE

This summary will attempt to outline the development of the cadenza within the general scope of the basic solo violin repertoire. The historical perspective will, of necessity, cover an extended period of time, but no pretense will be made or implied that this paper shall embody a complete survey of the violin cadenza and its development, as this would involve a task of monumental proportions.

The few musical examples which have been selected to illustrate this author's intentions have been chosen on the basis of their function or position in the history of the development of violin playing. Each is important within the entire scope of music history even though some may not be excerpted from famous compositions.

Beyond the actual historical research and documentation, the author has formulated several judgments and observations based upon his investigations during the study.

Significance of the Study

The fact that the cadenza has persistently existed within the structures of countless musical compositions, and this despite the drastic changes in musical styles and idioms which have occurred since the evolution of the cadenza out of early Baroque traditions, rather appears to indicate that it serves a function that is more than merely virtuosic in nature. The possibilites of serving as a means of musical expression have been utilized more artistically to a vast extent mostly during this century, and then only after attempts to eliminate the cadenza entirely had been made by many composers.

The idea of enacting research towards a study of the historical and musical development of the cadenza as it pertained specifically to the repertoire of the violin came only after this author discovered that literature about this musical phenomenon was sorely lacking.[1] References as well as chapters have been devoted to the cadenza in scholarly works more concerned with other matters. However, this author sincerely believed that the cadenza could and often did serve a significant stylistic and musical purpose according to the particular context in which it was to be found. Thus, a research project was born.

The material to be found in this summary is a condensation of the bulk of this author's primary investigations.

Definition and Origin of the "Cadenza"

> "A cadenza is an extension of the embellishment outside the time of the movement. It occurs at a point where the remaining parts can reasonably wait (except in the case of accompanied candenzas, which are written out, and are not in the strictest sense, cadenzas at all). Since it usually occurs at or towards the end of a movement or section, it can be regarded as a special case of the familiar principle of saving up the most striking embellishment for the concluding passage."[2]
> "A cadenza is a flourish of indefinite form, introduced upon a bass note immediately preceding a close of some finality."[3]
>
> "The cadenza — 'un chant de caprice' — was essentially an elaboration of the practice of ornamenting cadences."[4]
> "A cadenza is an extended section in free, improvisatory style inserted usually near the end of a composition where it serves as a retarding element, giving the player or singer a welcome chance to exhibit his technical brilliance shortly before the piece closes."[5]

In the most simple terms, the word "cadenza" describes an elaboration or extensive embellishment of some form at an important cadential point. It's beginning was most often indicated by a fermata (𝄐), with its length being dictated by the traditions of the period or the desire of the composer and/or performer.

Historically, the greatest impetus to the development of the cadenza came out of the "Bel Canto" style of singing in early Italian opera, coinciding approximately with the evolution of the Da Capo Aria form during the early years of the seventeenth century. Within such a context, the solo singer would improvise a flourish above sustained or delayed harmony built upon the dominant tone just preceding the final close. This flourish served several functions: first, it helped to display the flexibility, compass and expressive powers of the singer's voice; second, it had tremendous psychological value in that it intended to amaze and astound the listeners to such a climactic pitch of frenzy that thunderous applause in approval of the performance was spontaneous and immediate (hence, its place preceding the final close); and third, it provided a form of varation upon the return of the beginning section of the da capo aria or scena.

Yet, the mere vocal traditions of the late Renaissance and early Baroque eras were not the only influences upon the development of this climactic device. Heavy and elaborate ornamentation and embellishment, a feature very characteristic of the music of the same period, was one of the factors which contributed to the growth of the cadenza. Upon analyzing the structures and functions of practically any cadenza, in terms of the individual notes and figurations, it could be shown that the bulk of the material consists of ornaments,[4] and ornamentation was as easily adaptable to the instrumental media as to the vocal ones at that time.

Basically, cadenzas can be analyzed and grouped into four types, each growing out of the preceding one. These cadenzas may function as:

1.) ornamented cadences,

2.) accompanied cadenzas,

3.) solo or unaccompanied cadenzas, and

4.) combinations of any or all of these varieties.

The Cadenza in the Baroque

The earliest examples of cadenzas are to be found in the solo voice parts of music by the Italian operatic composers Giulio Caccini (ca. 1546-1618) and Claudio Monteverdi (1567-1643). In crude form, these cadenzas were nothing more than extended ornamentations on or around the dominant of the penultimate closes and sounding much like improvisations.

Since the cadenza developed out of the vocal tradition of improvisatory display, it is legitmate to rationalize that the earliest instrumental examples of this style likewise adhered to the same principles of unwritten extemporization.

One of the oldest extant examples of the cadenza in the violin repertoire is to be found in the little-known works of a sixteenth- and seventeenth-century composer from Venice by the name of Dario Castello. He was composing sonatas for the violin at a time when others such as Girolamo Frescobaldi (1583-1643), Biagio Marini (1597-1665), Cav. Giovanni Battista Buonamente as well as other contemporaries, were still writing multi-sectional canzonas. Examples from Castello's works contain free climactic passages at the ends of clearly defined movements. These characteristic embellished cadences were usually supported by a pedal tone in the bass and behaved much in the manner of improvised cadenzas.[7]

The final suite from Walther's second set of compositions ("Hortulus Chelicus," 1688) features a most lucid example of one of the earliest existing "solo" or unaccompanied cadenzas. One of the passages involves a very fast running or scale-like figure while the other illustrates a very brilliant usage of double-stop thirds and trills.[8]

The earliest form of cadenza to be found in instrumental music was most usually characterized by arpeggios as well as some form of virtuoso figuration or special effect idiomatic of the instrument for which it was written. This tradition persisted well into the early virtuoso period of the middle-Baroque, as exemplified by the works of the masters of the Italian schools.

Arcangello Corelli was the foremost composer of music for the violin of his generation. His cadenzas are of the type described earlier in Boyden's definition of the term "cadenza" — they are actually ornamented cadences. However, Corelli has gone to the task of writing these ornaments out in full, instead of allowing the performer to improve them as the style required.

Examples of this type of cadenza may be found in Corelli's Solo Sonatas for Violin and Continuo, Op. 5 and may serve as representative illustrations of the early cadenza described by Boyden. The first movement of *Sonata No. 1 in D major, Op. 5 No. 1* (excerpts of which may be found in Carl Flesch, *The Art of Violin Playing, Book Two: Artistic Realization and Instruction*, P. 33) contains elaborate ornamentation attributed to be Corelli's own. The Allegro portions of the same example (but not illustrated in the Flesch work) contains extensive arpeggiations over sustained pedal tones. These extended broken chords are one device described by Boyden as being characteristic of these early cadenzas.

In this early era of violin virtuosity, this example would have served as a fairly remarkable display of technical skill. The melismatic ornaments found in the second measure require smooth and even finger action for their graceful execution as well as good bow control over an even tone production. This passage also serves a strong musical function, in that it has a firm melodic shape. The arpeggios of the "Allegro" demonstrate both a contrasting bowing articulation as well as a climactic ascent built this time not through melody, but from the various levels of dynamic terracing, which follow the contour of the rising arpeggio to its peak and then descend to cadence into the next section.

As violin technique developed and became more refined, the cadenza came to be employed less in the Duo Sonata (although examples may indicate that its use in this type of composition never did extinguish itself, as the opening to the third movement of Cesar Franck's *Sonata for Violin and Piano* illustrates), and appeared with astonishing rapidity and frequency in the Solo Concerto form which was developing during approximately the same period in music history. Gradually, the true cadenza became emancipated from the ornamented cadence and appeared in two primary forms; accompanied and unaccompanied. Functionally, both varieties initially served the same purpose (that of virtuosic display) and usually with the equivalent effect. Accompaniment, when it was to be found merely tended to suit the purpose meant for it by the particular composer or set by the mood of the specific work. Referring back to the aforementioned Corelli Sonata, the sustained pedal tones beneath the arpeggiations of the Allegro may be classified as a form of accompaniment.

Numerous examples of both types are to be found among the sonatas and concerti of Antonio Vivaldi, Giuseppe Tartini, Pietro Locatelli, et al, and the *Caprices Op.* 3 of Locatelli, which already resemble complete solo cadenzas in terms of their virtuosic demands upon the performer, contain fermatae at the end of the caprices to suggested short additional improvisations on the respective cadences (in the manner of Baroque cadenzas).

Examples also exist in the works of the French composers Leclair, Loielet and Veracini, as well as various composers of the Germanic schools.

Example 1 illustrates a short cadenza-like interlude of the accompanied variety. It has been excerpted from the transition between the end of the development section and the start of the recapitulation of the main theme in the first movement of the *Violin Concerto No. 2 in E major* by Johann Sebastian Bach. Its appearance at the major climactic point of the movement as well as its obvious contrasting character from the remainder of the movement (its even marked "Adagio") can justify its being classified as a cadenza.

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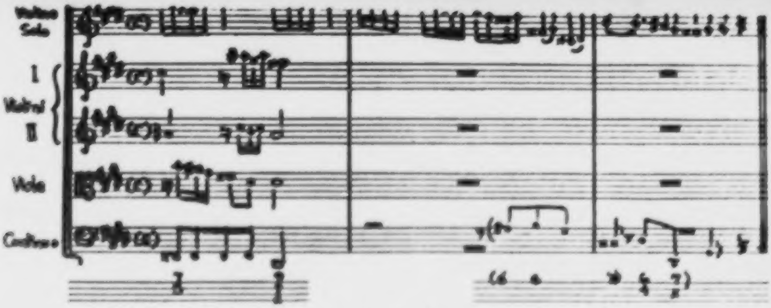

Example 1.

Johann Sebastian Bach:
Concerto No. 2 in E major for Violin and Orchestra, BWV 1042:
I: (Allegro) mm. 120-2.

No. 712. E.E. 2815 Ernst Eulenburg Ltd., London-Zurich Reprinted with permission of the publisher, whose sole selling agent in the Western Hemsphere is C. F. Peters Corporation, 373 Park Avenue South, New York, N.Y. 10016.

The Cadenza in the Classical Period

During the Baroque era solo cadenzas both written or improvised bore little relationship to the thematic materials of the works in which they were to be included. They were at first, merely vehicles for virtuosic display. However, during the stylistic changes of the Rococo age, a major transformation occurred in the construction and style as well as the function of the cadenza.

In 1752, Johann Joachim Quantz outlined what he believed to be definitive characteristic of a true solo cadenza. In his *Versuch einer Anweisung die Flote traversiere zu spielen* he enumerated the following points which he believed to be ideal features of good cadenzas:[*]

1) The cadenza normally and naturally begins on the dominant chord of the key: (the launching of the cadenza from the fermata above a tonic 6/4 chord was characteristic of later Concertos of the Classical period and did not appear before 1750)
2) it is musically constructed of thematic materials heard previously in the movement;
3) it generally consisted of idiomatic facets of violin virtuoso technique — rapid scales, high positions, arpeggios, trills, multiple stops, unusual bowings, pizzicato and similar devices;

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4) it ended with a trill on the dominant, leading back to the return of the orchestra on the tonic chord of resolution.

In writing of the performer's intentions during a cadenza he warns however:

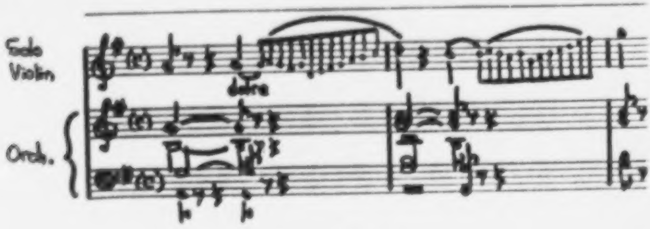
> The greatest beauty lies in that, as something unexpected, they should astonish the listener in a fresh and strking manner and at the same time impel to the highest pitch the agitation of the passions which are sought after. However, you cannot believe that this can possibly be accomplished with a multitude of quick passages. The emotions can be excited much more quickly with a few simple intervals skillfully interspersed with dissonances, than by merely a lot of useless running figures."

Composers of the Classical period handled cadenzas with special care. They lovingly transformemd the device into a refined surge of technical display (as opposed to a fiery one) combined with a spontaneous feeling for the beauty of melody.

Among the most definitive and beautiful concerti for violin during this time are those of Wolfgang Amadeus Mozart. He intentionally wrote these delightful works as vehicles of his own skill as a violinist. Because he observed the tradition of extemporizing the cadenza in performance, none of his cadenzas exist anywhere in manuscript for these works. However, one cadenza which he did compose for violin in combination with another solo instrument gives us some idea of what Mozart's style of cadenza writing was like as it pertained to the violin. It is to be found in his *Sinfonia Concertante in E-flat major for Violin, Viola and Orchestra.*

Unlike the Baroque cadenzas, which were generally confined to one movement per concerto (usually the first one), cadenzas of the Classical period were commonly found in the slow second movements and the flashy finales as well. They were of shorter duration than the main one which was inevitably found between the recapitulation and coda of the first movement.

Classical composers who wrote in a style bordering on romanticism but who continued to employ the traditional classical forms in their works either allowed for improvised cadenzas or included their own written ones. Beethoven's solo concert combine both of these principles, and such an observaton as the above may be noted in his piano concerti. In his *Violin Concerto in D major, Op.* 61, we find no precomposed or written cadenzas by the composer. However, at the close of each movement (preceding the coda in the case of the first and third) he has made allowances for cadenzas to be included, indicating their positions in the work with pause signs. Only in the slow second movement does he revert to the Baroque tradition of elaborate melismatic ornamentation, and although these passages cannot be classified as cadenzas in the true sense of the term, they strongly resemble the dashing style of the opening measures of the Corelli Sonata mentioned previously.



Example 2.

Ludwig van Beethoven:
Concerto in D major for Violin and Orchestra, Op. 61.
II: (Larghetto) mm. 40-1.
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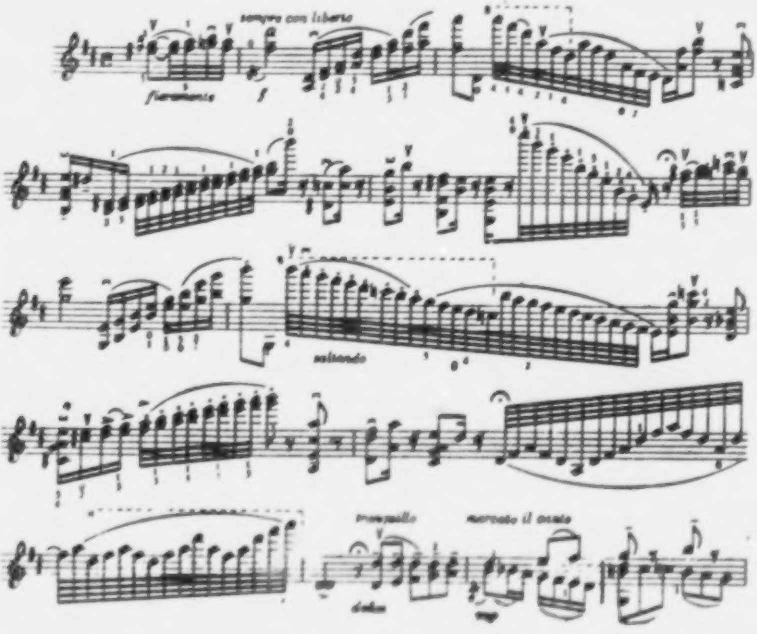
During this same traditional period between Classical and Romantic ideals there developed a second "Virtuoso Period" in the history of violin playing (it must be remembered that the first period had enjoyed a rich existence during the time of Corelli and his contemporaries).

Perhaps the foremost violinist-composer of this new and colorful style of playing was the ultimate showman of the age, the incomparable Nicolo Paganini. He literally "rediscovered" violin technique in the earlier works of Locatelli, specifically in the caprices *of L'Arte del Violino — XII Concerti cioe Violino Solo, con XXIV Capricci and Libidum, Op.* 3 and purportedly added several "tricks" of his own, namely those of left-hand pizzicato and double-stop harmonics." Paganini employed these effects to their fullest psychological advantage in his own concerti which although were "Classical" in their formal structures, tended to help hasten in romanticism in terms of their emotional musical appeal and mere virtuosic display. None of Paganini's own cadenzas are known to exist in any form (aside from the "quasi-cadenza" episodes in the B minor portion of the development section of the *Violin Concerto in D major, Op.* 6: mm. 231 ff.), although one purported to have been extemporized by him was supposedly written down after a single hearing by some unknown violinist who sat in the audience during one of Paganini's legendary performances. It has since been attributed to Emile Sauret. It is very much in the wild and seemingly unabashed virtuosic daring characteristic of Paganni's style of writing, with the result that it most effectively fits the mood and manner of the concerto. It is awe-inspiring in the technical demands upon the performer and dazzles the ear of the listener with wild flourshes, impressive polyphonic writing and fantastic special effects. The opening measures have been reproduced as Example 3.



Example 3.

Emile Sauret:

Cadenza to the First Movement of *Violin Concerto No. 1 in D major, Op. 6*, by Nicolo Paganini
mm. 1-12.

Robert Forberg (Germany)

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The Cadenza in the Romantic Era

One cadenza which has perhaps served as a model to composers more than any other since its composition is that from the *Violin Concerto in E minor, Op.* 64, by Felix Mendelssohn. Although it was not composed entirely by Mendelssohn, but rather with the assistance of Ferdinand David, the violinist to whom the concerto is dedcated and with whom Mendelssohn collaborated in its development, this cadenza undoubtedly belongs as an integral part of the work because of its natural tendency to grow out of the latter portions of the development section (of the first movement) until the violin soloist is left suddenly alone. Then, with bouncing bow over delicate arpeggations, as the soloist nears the completion of this diversion, the orchestra joins him along the way before he has quite completed his task. Due to these overlapping elements, it would be virtually impossible to attempt to remove the cadenza from the work without creating an obvious breach in both its formal structure and melodic continuity.

On the other hand, the cadenza to the first movement of the *Violin Concerto in D major, Op.* 35, by Peter Tschaikowsky, although justifiably a traditional part of the work due to its inclusion by the composer, could be deleted from the work, following the chords which introduce it, and substituted with another cadenza if one were available.

The cadenza from Edward Elgar's *Violin Concerto in B minor, Op.* 61, tends to encompass every type as well as device of violin cadenza writing. It is written in a quasi-recitative style, containing completely solo fragments interspersed within its structure as well. It also exemplifies the ornamented cadence as well as strict accompanied sections. Within the work, it provides a link between the thematic material of the third movement and the completion of the "cycle" with the recapitulation of the main theme from the first movement which follows out of it. Perhaps the only violinistic "tricks" omitted from this masterpiece are those previously mentioned as being of Paganini's own ingenuity.

The Cadenza in the Twentieth Century

It would be foolish as well as futile to generalize that in specific eras of music history the cadenza had been improvised by the performer, written out by the composer, or not written down at all and that these particular aspects of the continued development of the violin cadenza genre were characteristic of a particular period and no other, for these tendencies may be found unexpectedly throughout the entire history of violin playing.

Improvisation was certainly a major characteristic of the cadenza during the Baroque and Classical Periods, yet there are examples of cadenzas composed and written out by Tartini and Vivaldi, and pauses implying cadenzas in certain works by Mozart and Beethoven. Many Romantic composers, Bruch and Dvorak among them, interpolated only the briefest of cadenzas in their concerti in their series efforts to eliminate that device altogether. Brahms included a short diversion in the third movement of his *Concerto, Op. 77*, yet he left the cadenza of the first movement up to the performer and as a consequence, many different editions of Cadenzas by different violinist-composers exist, those by Joachim and Kriesler perhaps being the most definitive. Tschaikowsky, on the other hand, wrote the display piece found in the middle of the first movement of his *Violin Concerto*, along with those at the beginning and in the finale.

However, since the turn of the century and perhaps from even before then, there had developed a strong tendency on the part of the individual composers to write their own cadenzas for their concerti and concert pieces. The primary reasons for this fact, this author supposes, stems from the belief that there were currently so many individual styles of composition which were uniquely typical of only certain individuals that it would be most difficult, even for an accomplished virtuoso to compose appropriate and tasteful cadenzas in the same manner and style. Excepting the current avant-garde composers with whom I do not happen to be very familiar, especially in the field of the Violin Concerto, I have not yet found, seen, read or heard of a concerto or concert piece which called for the performer to either compose or extemporize his own cadenzas.

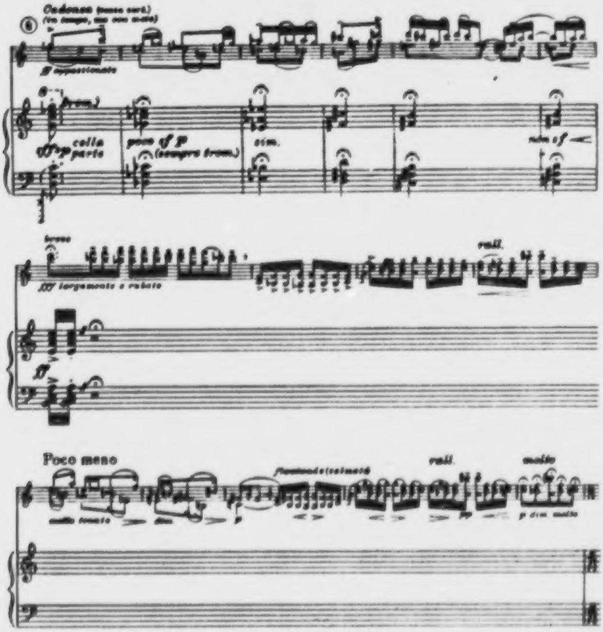
Another reason for this development may very well depend upon the fact that the art of improvisation as related to serious music on the concert stage has been on a steep decline for a long period of time.

Cadenzas in current day musical literature are as unique, almost, as the concerti in which they may be found. Yet even in these, one may make comparisons with any of the previously discussed varieties. The cadenza from the Kabalevsky Violin Concerto, for example, does not sound truly "modern" by our terms of defining contemporary music, but its impulse, development and conclusion are modelled directed from the patterns established by the cadenza in the Mendelssohn concerto. The same observations may be drawn with regards to certain facets of the Cadenza in Bartok's *Violin Concerto* as well. Samuel Barber introduces short recitative-like cadenzas of the accompanied type in his Concerto, Op. 14.

The wide diversities in the styles of various American composers has produced examples of many different kinds of violin cadenzas.

For example, the cadenza to the fourth movement of the *Serenade for Violin, String Orchestra, Harp and Percussion* ("Agathon"), composed by Leonard Bernstein in 1954, combines the elements of recitative-style with accompanied and solo sections. It appears in its entirety as Example 4, below.

Another example follows closely to the traditional models of the solo cadenza and may be found in the first movement of the *Concerto for Violin and Orchestra* by William Schuman. It precedes a lengthy coda-like section which recapitulates the second theme of the molto tranquillo section of the movement.



Example 6.

Leonard Bernstein:
Serenade for Violin, String Orchestra, Harp and Percussion
(1954)
IV: ("Agathon") Cadenza
mm. 36. ff.

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In the second movement of the same Concerto, Schuman includes a section marked "quasi-cadenza" which is also unaccompanied. The cadenza to the first movement is less virtuosic in nature than the Bernstein excerpt. However, this seems totally justifiable because Bernstein composed his *Serenade* specifically for Isaac Stern. Both cadenzas are very musical and contain fragments of the themes of the movements, in which they are to be found, within their bounds. The fact that Bernstein's cadenza also tends to feel arhythmic in comparison to Schuman's is justified in his emulation of ancient Greek concepts in his stylistic representation of the seven major characters in Plato's charming dialogue *The Symposium*; among these concepts is that of "dithyramb," or free metre.

The last example to which we may refer has been mentioned because of its unique quality of remaining unaccompanied while simultaneously creating its own accompaniment. This phenomenon comprises the second selection from *Three Miniatures for Violin and Piano* (1959) by Krzystztof Penderecki, an eminent Polish composer. It is avant-garde in its conception and very descriptive in mood. Penderecki has scored this Miniature entirely without keyboard — except for the following stipulation in the instructions:

> While performing Miniature II the violinst should bend as much as possible towards an open interior of the piano. The loud pedal should be depressed throughout this Miniature.[12]

Since the piano strings are not damped, they will vibrate in sympathy with the overtones produced on the violin, thereby creating its own soft, shimmering accompaniment.

FOOTNOTES

1. Listings have been surveyed in the *Masters Theses in Education* series edited by H. M. Silvey (18 vols.); Cedar Falls, Iowa: Research Publications (1951-1969), as well as *Dissertation Abstracts* published by University Microfilms, Ann Arbor, Michigan. The author would be most appreciative of learning of any unpublished papers or studies on this subject which may have been overlooked.

2. Robert Donington. *The Interpretation of Early Music*. London: Faber & Faber, 1963. p. 121.

3. C. Hubert H. Parry. "Cadenza" in *Grove's Dictionary of Music and Musicians, Vol. 2*. London: Macmillan & Co. Fifth Ed., 1954. pp. 12-13.

4. David D. Boyden. *The History of Violin Playing from its Origins to 1761 and its Relationship to the Violin and Violin Music*. London: Oxford University Press, 1965. p. 289.

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5. Willi Apel. "Cadenza" in *The Harvard Dictionary of Music*. Cambridge, Massachusetts: Harvard University Press, 1964. p. 109.

6. Donington, *op. cit.*, p. 121.

7. An example of just such a cadenza from his second book of compositions "Sonate Concertante in stilo moderno," Book II, which was published in Venice as early as 1629, may be found in: William S. Newman. *The Sonata in the Baroque Era*. Chapel Hill: University of North Carolina Press, 1959. p. 109.

8. This example may be found in its full version in *A Modern Performing Edition of Suite No. XXVIII ("Serenata") in D major for Violin and Continuo by Johann Jakob Walther (From "Hortulus Chelicus")*, an unpublished research paper by this author.

cf. with the manuscripts of the *Alfred Einstein Collection of Madrigals and Instrumental Music of the 16th-18th Centuries*. Smith College, Northampton, Mass.

9. Boyden, *op. cit.*, pp. 463-4.
cf. Quantz, *op. cit.* supra, Ch. XV.

10. Boyden, *op. cit.*, p. 464.
q.v. Quantz, Ch. XV, para. 18.

11. While researching material for another paper (*op. cit.*, fnte 8, p. 5, supra) this author discovered that Johann Jakob Walther had been the real progenitor of the left-handed pizzicato effect (*op. cit.*, p. 19), leaving the double-stop harmonics still to Paganini's credit, however.

"Flying staccato," a dazzling bowing type also associated with Paganini by tradition, has likewise become related to Walther.

12. Notes from the score: *Three Miniatures for Violin and Piano* by Krzysztof Penderecki. Warsaw, Poland: P.W.P. Przedstawicielstwo Wydawnictw Polskich. Copyright assigned to SESAC, Inc., New York.

BIBLIOGRAPHY OF MUSICAL EXAMPLES

Acknowledgement of Editions

Bach, Johann Sebastian. *Concerto in E major for Violin and Orchestra, BWV 1042*.
Score: Edition Eulenburg, Miniature Score No. 712
New York: C. F. Peters Corporation.

Beethoven, Ludwig van. *Concerto in D major for Violin and Orchestra, Op. 61*
Score: Reduction for Violin and Piano.
Schirmer's Library of Musical Classics, No. 233
New York: G. Schirmer, Inc.

Bernstein, Leonard. *Serenade for Violin Solo, String Orchestra, Harp and Percussion*. (1954)
Score: Reduction for Violin and Piano by the Composer
New York: G. Schirmer, Inc.

Corelli, Arcangelo. *Sonata in D major for Violin and Continuo, Op. 5, No. 1*
Score: Edited for Violin and Piano by Gustav Jensen
London: Augener's Edition, No. 7354A.

Mozart, Wolfgang Amadeus. *Sinfonia Concertante for Violin, Viola and Orchestra, in E-flat major, K. 364*.
Score: Heugel & Cie. Miniature Score No. P.H. 117.
New York: Sheffield Music Corp. (Sole Agents)

Penderecki, Krzysztof. *Three Miniatures for Violin and Piano* (1959)
Score: P.W.P. Przedstawicielstwo Wydawnictw Polskich, Warsaw
Copyright assigned to SESAC, Inc., New York.

Sauret, Emile. *Cadenza to Violin Concerto No. 1 in D major, Op. 6 by Nicolo Paginini*.
Score: Robert Forberg
New York: C.F. Peters Corporation (Sole Agents)
Catalogue No. F57.

PY AVAILABLE

Schuman, William. ***Concerto for Violin and Orchestra*** **(1960).**
Score: Merion Music, Inc.
Bryn Mawr, Pennsylvania: Theodore Presser Co. (Sole Agents)

SELECTED BIBLIOGRAPHY

Beckman, G. *Das Violinspiel*, Anhang, Nr. 18.

Boyden, David D. *The History of Violin Playing from its Origins to 1761 and its Relationship to the Violin and Violin Music.* London: Oxford University Press, 1965.

Donington, Robert. *The Interpretation of Early Music.* London: Faber & Faber, 1963.

Hutchins, Arthur. *The Baroque Concerto.* London: 1961.

Knödt, Heinrich. *Zur Entwicklungsgeschichte der Kadenzen in Instrumentalkonzert,* in "Sammelbände der Internationalen Musikgesellschaft, XV," 1913-1914.

Moore, Douglas. *From Madrigal to Modern Music: A guide to Musical Styles.* New York: W. W. Norton & Co., 1962.

Newman, William S. *The Sonata in the Baroque Era.* Chapel Hill: University of North Carolina Press, 1959.

Quantz, Johann Joachim. *Versuch einer Anweisung die Flöte traversière zu spielen.* Berlin, 1752. New Edition (Arnold Schering), 1905.

Schering, Arnold. *Die freie Kadenz in Instrumentalkonzert des 18. Jahrhunderts.* in "Kongress der Internationalen Musikgesellschaft," Basel, 1906.

________. *Geschichte des Instrumentalkonzerts.* Leipzig, 1905.

Veinus, Abraham. *The Concerto.* London, 1948.

ARTICLES IN ANTHOLOGIES

Apel, Willi. "Cadenza" in *The Harvard Dictionary of Music.* Cambridge, Massachusetts: Harvard University Press, 1964. p. 109.

Parry, C. Hubert H. "Cadenza" in *Grove's Dictionary of Music and Musicians, Vol. 2.* London: Macmillan & Co. Fifth Ed., 1954. pp. 12-13.

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A STUDY OF THE RELATIONSHIP OF SINGING ACCURACY TO THE PITCH-MATHING ABILITIES OF EIGHTY-ONE SUBJECTS

(Order No. 69-17,830)

Ira Chesley Powell, D.Mus.Ed.
The University of Oklahoma, 1969
Major Professor: Robert C. Smith

Pitch-matching tests revealed significant disparities in the tuning of the two ears of many of the eighty-one subjects comprising this sample. This diplacusis is defined as the hearing of a single tone as two separate and distinct pitches by the two ears of a person so affected. Thirty-one of the subjects tested could be classified as having difficulty singing "in tune" or matching pitches of tones. The remainder of the sample ranged from those with somewhat more than casual interests in music, although not necessarily performers nor music majors, to the highly trained professional musician.

Electronic testing equipment was specially designed and constructed to test pitch-matching abilities, using sine wave tones with frequencies within the normal range of the human voice. Singing accuracy scores were determined by exhaustive tone-by-tone analyses and evaluations of the subjects' singing accuracy of intonation as recorded on stereophonic equipment.

Data from pitch-matching and singing accuracy tests were augmented by statistically weighted factors for previous vocal and instrumental music experience for each of the test subjects. These four variables constituted the raw data which was subjected to various statistical analyses utilizing an IBM 7040 Digital Computer. Analyses included computations of product-moment coefficients of correlations of means, a simultaneous correlation and regression analysis of the means, a partial correlation analysis of means with experience factors held constant, and a stepwise regression analysis.

Correlation coefficients of singing accuracy with each of the other three variables were, in descending order: vocal music experience, pitch-matching ability, and instrumental music experience. The relatively low correlation of instrumental experience with singing accuracy appears to imply that such instrumental experience placed emphasis on the mechanical aspects of instrumental playing while inadequate attention was given to intonation accuracy.

This study suggests that, for some people, a sufficient amount of vocal music experience would seem to override their pitch-matching ineptness and enable them to learn to sing with reasonably accurate intonation. However, certain individuals appear to have such a sensori-neural disparity or diplacusis as to be unlikely ever to be able to sing with acceptable pitch accuracy, regardless of the amount of vocal music experience.

Among other recommendations made, the writer suggests that school systems inaugurate, as part of each pupil's permanent records, an "auditory profile" to be used by educational counselors in guiding the youngster toward selection of school subjects for which he is best equipped. The "auditory profile" might contain the cumulative records and scores of hearing tests, among which might be included tests for hearing acuity, pitch-matching, pitch difference discrimination, and intensity difference discrmination.

M 3.00; X $3.00. 55 pages.
(Ira Chesley Powell is presently Professor of Music, University of Missouri at Columbia.)

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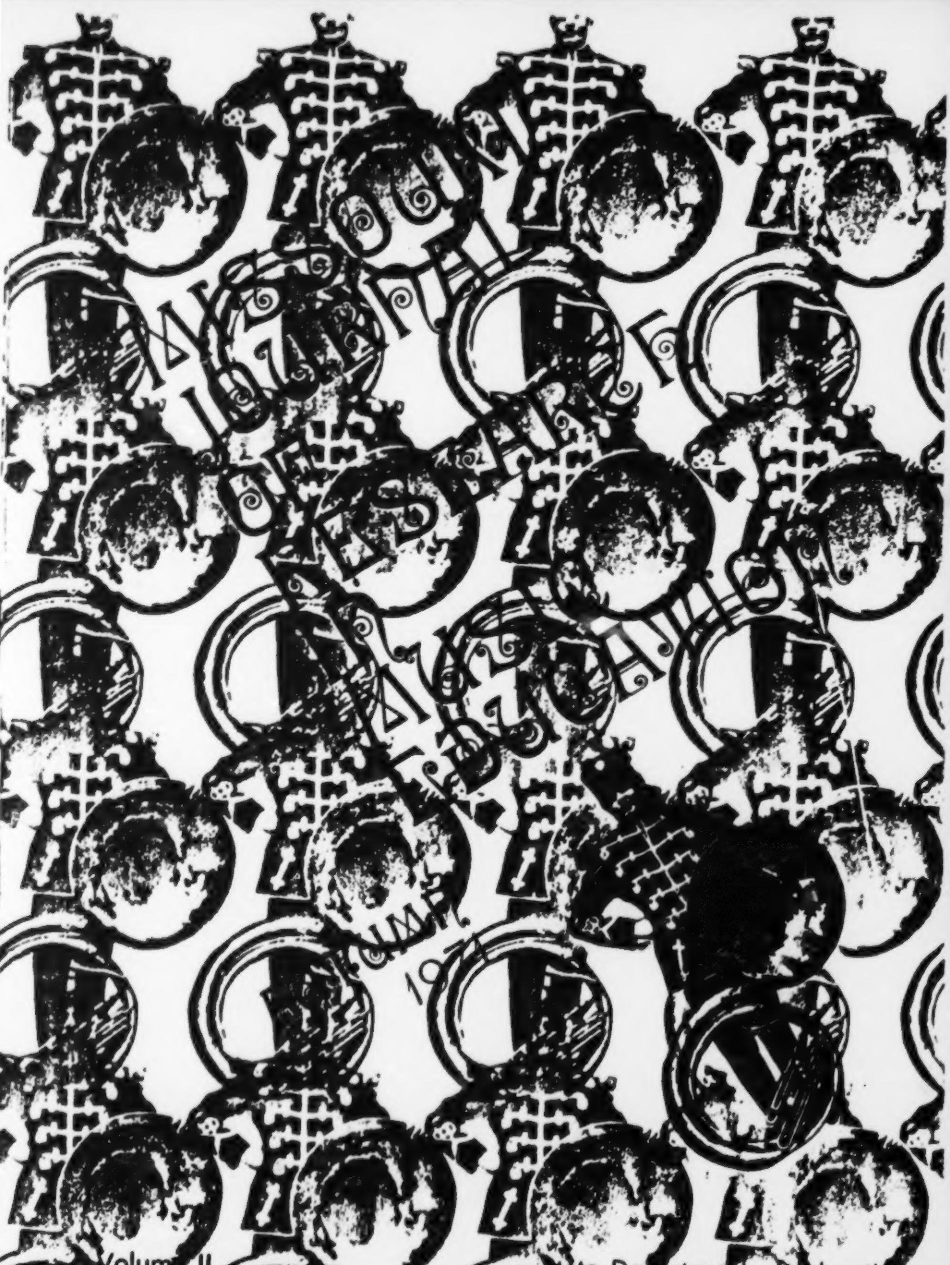

MISSOURI JOURNAL OF RESEARCH IN MUSIC EDUCATION

SUMMER 1971

Volume II

Number

State Department of Education

Arthur L. Mallory, Commissioner

Jefferson City, Missouri

MISSOURI JOURNAL OF RESEARCH IN MUSIC EDUCATION

Published by the Missouri State Department of Education

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PREFACE

The *Missouri Journal of Research in Music Education*, published as a Bulletin of the State Department of Education, is devoted to the needs and interests of the school and college music teachers of Missouri and the nation. This issue, Volume II, Number 5, is the tenth to appear in as many years.

The members of the Editorial Committee are grateful to those readers who have written suggestions concerning the content of past issues and request that criticisms and suggestions, always welcome and never unheeded, again be sent to the Editor concerning the content of this issue. We strive for a reasonable balance among music theory, history, philosophy or aesthetics, and pedagogy. It is difficult to judge how successful we are without reader response.

Since this publication is not copyrighted, complete articles or excerpts from articles may be made without securing permission from the editor or the authors. It is requested that credit be given to the *Missouri Journal of Research in Music Education*.

Copies of this journal are obtainable without charge from the Missouri State Department of Education.

—THE EDITOR

RESEARCH IN ACTION: THE TRANSFER OF RESEARCH IN MUSIC AND MUSIC EDUCATION INTO THE CLASSROOM

Jack R. Stephenson

University of Missouri — Kansas City

The following address was given by Professor Stephenson at the Missouri Music Educators Association conference in Jefferson City, Missouri, January, 1971.

In the Twentieth Century, research and the resulting accumulation of knowledge has seemed to grow by an algebraic rate. We are drowned by facts and figures, by new ideas and new methods. Yet this growth is not even. The physical sciences have moved faster than behavioral and social sciences creating an affluent world appearing at times more destructive than constructive. And in turn we have our problems in music education. Here our growth in research and application of research has been slow, spotty, and mediocre by comparison to even the behavioral sciences. There are reasons for this. Music is such an exciting and rewarding experience, no musician has the time or the interest necessary for the nitty-gritty of research. And then, too, the level of perfection reached in music for the past several hundred years obviously has been in advance of most other fields of human endeavor which in turn has caused us to either rest on our laurels or place music on an untouchable, sacred pedestal. In addition, we music educators are a hardheaded, independent bunch; perhaps a trait instilled in our makeups by the rigorous discipline required to master music. Or maybe it is the old Missouri "show me" philosophy which demands concrete proof of a better way before we change what we are doing.

In any case we are faced with increasing amounts of knowledge. This increase in knowledge has changed our approach to problem solving and training for problem solving. Thirty years ago the statistics class was a laborious process of learning formulas and solving problems primarily with pencil and paper. Now it is a problem of semantics. When we teach statistics we aim to help the student gain the power to read his journals. These large amounts of knowledge have led to the development of more knowledge. The computer began as a simple device designed to store knowledge. For example, one could store 50,000 records of metal alloy combinations and retrieve the results of these combinations in seconds. Now these computers have been developed into complex problem-solving devices, an interesting example of which was the role played by the computers in the successful return of the astronauts after the explosion in the Apollo Moonshot.

The sheer proliferation of knowledge is overwhelming. The advance in biochemistry alone has taxed the medical profession, pharmacy, and particularly the Federal Government Controlling Agencies. A college professor in the sciences certainly is outdated in ten years unless he finds some way to keep up. A striking and simple example of proliferation in music is the fact that if we spent eight hours a day for the rest of our lives, we could not listen to all the music that has been recorded to date—not to mention what will be recorded. It is projected that 2000 A.D. there will be more than one million periodicals published in the United States alone.

To further complicate the situation, we are in a period of change. Not only change but a rapid rate of change creating monstrous mechanical problems: there is a shortage of personnel to repair the hardware of our technology; or one can fly from San Francisco to New York in two hours and then not be able to land; or if one can land, it takes longer to get from the airport to our final destination than the flight time consumed. But more serious than the mechanical problems are the problems created by technology changing so rapidly. The ecology cannot keep up with the technology thereby destroying the environment, the world and the way of life we are supposed to be improving. But more serious than the ecology problem is the social, human problem created by such great and rapid changes. Not only poverty and starvation, wars and death, but increasing anxieties and search for a life purpose, a *Weltanschauung* in this increasing seemingly insurmountable chaos. It is predicted that the average working man will have to completely change his occupation at least three times between the ages of 20 and 60. Not only does this entail a complicated system of retraining and financial support, but it taxes a man in terms of his own self-image, his justification for living. Recent sociological research indicates that too many changes in a space of time can cause serious psychosomatic and physiological illnesses.

Yet as problematic as *change* may be, we must face the fact that change is a part of the world today. From an article in the July 1970 *Psychology Today,* "Cultures in Collision," by Philip E. Slater we have this statement:

> . . . The old culture, when forced to chose, tends to give preference to property rights, technological requirements over human needs, competition over cooperation, violence

> over sexuality, concentration over distribution, the producer over the consumer, means over ends, secrecy over openness, social reforms over personal expression, striving over gratification, Oedipal love over communal love. The new counterculture tends to reverse all of these priorities . . . I do not believe our society can long continue on its old premises without destroying itself and everything else. Nor do I believe it can contain or resist the gathering forces of change without committing suicide in the process . . . This of course makes the assumption that some kind of drastic change is either desirable or inevitable.[1]

The very definition of democracy with its "of, by and for the people" rests on change to meet the needs of the people. And change depends on communication of needs. And identification of needs depends on search and research. Therefore we can say democracy cannot exist without the process of research which leads us to the role of education in this country. We are committed to the basic premise of making education available to all children, because we believe knowledge is essential in sustaining a democracy. This demand on education immediately commits us to research — research to identify needs, knowledge, methods, and hardware.

Our question now is do we have adequate research in music education, and do we have adequate channels to make these results available to and usable by the classroom teacher?

First, do we have adequate research in music education? Henry Cady from Ohio State University had this to say to the Missouri Music Educators in the spring of 1970:

> . . . For the most part, they [the music teachers] accept teaching their art because a livelihood using their art in any other way is not possible at the present time except for a few people. Negatively speaking, one could say that generally music teachers are diverted performers, composers, theorists, and historians . . . [In a request for research titles from 1930-1962 out of 449 titles, 80% were either compositions or essays] . . . Because music educators come to the threshold of research by way of musical art, a very great change is required in those who become sophisticated in the methodology of the behavioral scientist . . . It is in this mode of inquiry that the music educator has produced a prodigious amount of inadequately performed research. The problems have been behavioral, but the methods have

> been library searching and sharing of quasi-educated guesses. [Some have called these guesses pooled ignorance.] It follows that the quantity of knowledge at advanced levels is so great that we had better revise our concepts of content, intensity, and duration of both undergraduate and graduate education . . . It could be that the methods of learning rather than the information of learning will become the general examination content for the doctoral aspirant.'

Allen Britton in the Spring issue 1969 of the *Journal of Research in Music Education* has a somewhat different view. To quote:

> . . . Of the 107 articles published in JRME from 1963 through 1972 . . . about half the articles were scientific in nature, while the remainder were historical or philosophical. However, beginning in 1963 a change can be noted. The large preponderance of our articles now report scientific rather than historical investigations.
>
> . . . The most important problems of teaching music in the schools are musical problems, and these require the most sensitive musicianship and wide ranging experience with music itself for education. Thus, it would seem that the primary preparation of professors of music education should be musical rather than psychological, sociological, or anything else . . . It seems to me that we should grant at the outset that only a comparatively few members of the music education profession will by the nature of their interests and training possess the kind of enthusiastic interest in scientific research which can guarantee competent results. It will be this comparatively small group of researchers who will set up laboratories for continued research in the future, and who are most likely to have the breadth of wisdom requisite to the proper interpretation of research findings.'

Undoubtedly both men are correct. We must have well-defined research, and we cannot all be research scientists. We are teachers of music and so we must be teachers and we must be musicians. As the medical doctor must have research in new medicines and new techniques, and as the builder must have new materials and new techniques, so the music educator facing the learner daily must have new materials and new techniques to do his job. First, the teacher *must know his music*, be able to perform, be aware of what has been happening in music particularly since 1900, and be aware of what is happening today; he must know his materials and where to find new materials; he must know all the instruments, old and new, including electronic ones. Secondly, he *must know how to teach,* to know children of all ages, to understand the why and how of aesthetics and of learning; he must be a competent conductor. Finally, he must know *how to plan and administer,* to plan budgets, to integrate programs, to work with school and community. Every day in the life of a teacher there is a bit of research — a bit of trying something new. But unquestionably vigorous and formal research must be relegated to the person with the time, the facilities, the interest, and the know-how.

Secondly, do we have adequate channels to make research available and usuable? Again to quote Henry Cady:

> . . . We have yet to begin preparing programs for people of the kind who can convert the products of our research and encourage colleagues to use them.[4]

In terms of a well-designed and implemented program, this is true. However, there are programs working for communication of musical research right now, granted they are isolated and not very well integrated. We in music education have several very direct avenues for obtaining knowledge of innovations and research. *One, the universities:* through research, through workshops, through visiting clinicians and leaders in the profession, through research publications by the faculty, through university libraries. *Two,* we have our *professional organizations* at the national, state, local, and private level providing publications, conventions, workshops, underwriting and initiating research, providing bibliographies and lists of materials. *Three, the music industry,* publishers and manufacturers probably have done the best job of communication through workshops, brochures, specialists, clinicians, lists of materials, and records. Also, through the American Music Conference, knowledge of progress in music education is brought to the general public. *Four, the public schools* including our state departments of education, provide in-service training, require additonal training for pay increments, provide librarians and educational media staff, faculty libraries. This represents only a partial listing of what these agencies can do to bring research to the music teacher.

Then we have less formal avenues of information: the newspapers, magazines. Did you see the Time Magazine recently? It reports that they have synthesized a chemical which can make rats afraid of the dark. Or perhaps more pertinent to our young clien-

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tele, our students, is the cover page featuring Ali McGraw as the star of *Love Story*. The argument in this cover story is that this move represents the return to romanticism in the United States; to personal relationships rather than politics, to feeling rather than action. If this is so, it could have a direct bearing on the music experiences we choose for our students in the next few years.

In addition to the newspapers and magazines, we have radio and television. As I sat writing this speech, out of one corner of my eye and ear I was aware of Richard Chamberlain explaining to David Steinberg on the Johnny Carson show about his role as the lead in the new movie on the life of Tschaikowsky. We have never in the history of man had the opportunity to know so much. We can go and do and see. The world is becoming increasingly accessible to all. It is the real-life laboratory for student and teacher alike. It is an experience to see music therapy in action in London hospitals; a woodwind quintet in Amsterdam played on instruments made in the 18th century; avant-garde opera in Cologne, Mozart's "Magic Flute" in Vienna, children in Salzburg singing "Einen Kleinen Katzen" under the direction of teachers from the Orff Institute, a music education class in Bern, Switzerland, or flamenco in Malaga, Spain or the fados in Lisbon, Portugal, and then those wonderful pipe bands of Scotland. We can bring the greats of today to our very own doorstep. For example, the list of people who were clinicians at the four-day "Robert F. Kennedy Symposium" on the University of Missouri-Kansas City Campus was impressive: Alvin Toffler, William Daly, Ramsey Clark, Dr. Allan Westin, Hans Morgenthau, Victor Ferkiss, Nat Hentoff, B. F. Skinner, Buckminster Fuller, and Robert Vaughn. There is so much to do, so much to see, so much to read, so much to listen to, so many places to go; and in this lies our problem. *First*, we must have more time for these kinds of activities. *Secondly*, there must be systems for predigesting and editing. *Third*, we must learn how to rely on technology to store knowledge for us. *Fourth*, we are going to have to put first things first, to be able to leave out the nonessentials. *And* last we must give up the old American belief that we can do it all by ourselves. We have to learn to rely on and to use the multiplicity of avenues for knowledge available to us.

Now to return to the role of the universities, the professional organizations, the music industry, and our public schools. *Universities* must become resource centers available for our use at no cost seven days a week and 18 hours a day. In a music materials learning center we should expect to find every list of music available with sample scores and recordings. The universities do provide considerable knowledge about music. But we should be able to find all research on acoustics, buildings, budgets, curricula, you name it, and it should be available to us in seconds — just like the computer for the various alloys of metal. There has been a plan for several years to make every major university library a division of the Library of Congress, so that one could sit in a booth, dial Washington and read and inspect anything in the Library of Congress. We do not have this facility, because we are spending our money to fight wars instead. Then the universities need to be offering workshops year round and also other experiences jointly planned by the teachers and the university — planned to deal directly with the teachers' immediate problems. Related to this idea both Bruno Bettelheim, the Neo-Freudian child psychologist, and John Holt, author of the two books, *How Children Learn* and *How Children Fail*, speaking on different occasions in Kansas City this fall made similar observations concerning the role of higher education for the future. They felt the sooner one gets on the job the better. This is where we learn. And we will not be coming back to college to fulfill residence requirements and obtain doctorates. Instead we will use the university much as we use a public library, spending on the average two hours a day there for the rest of our lives, absorbing knowledge as it is needed and as it relates to our teaching problems. This activity will be a part of our job, and time must be provided for it.

And our professional organizations. This convention is the product of one of our professional organizations. They sponsor festivals, provide us with lists of materials, adjudication forms, instructions on how to prepare our music, and instruction on how to adjudicate. They initiate research. Several years ago the Music Educators National Conference persuaded the National Education Association to do a curriculum survey of Art and Music in the United States—one of the first curriculum studies ever done by NEA. MENC has provided the leadership for the past ten years for the Ford Foundation Contemporary Music Projects in an effort to improve the skills and knowledges of the music teacher. Then we had the Tanglewood Symposium; and the National Office of Education underwriting the Julliard Project (the results of which now are published by the Canyon Press.) This is an excellent example of a three-way cooperative endeavor: the United States Government, a school of music, and a publisher. We as individuals must take an active part in supporting our professional organizations. "Grass roots" philosophy has been the aim of MENC for some time, but it is difficult. We must work with these organizations which provide us with realistic and useful information.

The *music industry* must work more closely with the profession. Their efforts have been great, but at times at odds with the aims of good music education, often moving toward the fast dollar without seeing the long-range dangers. Again it is up to us to help guide the industry in serving us most efficiently. In so doing, of course, we insure their economic future, and at the same time insure the accessibility of materials and equipment.

In *our own schools* we need more time from day to day to make contact with these sources of information — not just during the summer months. Recognition and work load credit should be given for research and work in professional organizations. Paid sabbaticals are an absolute must, and some schools do have them now. We must go about setting our professional house in order. We will have to plan for the future to provide for our continuous growth as a profession. Other professions have done it — we must do likewise.

We are in one of the most exciting, one of the most challenging, one of the most varied professions in the world. It is a profession where one can never know enough. We should be demanding more research, more knowledge, and better access to knowledge. It will not work to have universities forcing us into the library, or school increments forcing us to get out and look for what we need. It is going to have to be our move, our demand for more answers to eliminate those problems and frustrations that keep our work from being as rewarding as it can be. It is the old adage: knowledge cannot be poured in. We will have to reach out and get our share — so start reaching.

BIBLIOGRAPHY

1. Slater, Philip E. "Cultures in Collision." **Psychology Today**, July, 1971, pp. 31-32

2. Cady, Henry L. "Research in Music Education: Functions and Constraints." **Missouri Journal of Research in Music Education**, Vol. II, No. 4, 1970, pp. 4-17.

3. Britton, Allen P. "Research in the United States." **Journal of Research in Music Education**, Vol. XVII, No. 1, 1969, p. 109.

4. Cady, Henry L. "Research in Music Education." p. 9

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PROGRAMMED INSTRUCTION AND MUSIC EDUCATION

Douglas L. Turpin
Washington University, St. Louis

Introduction

In the 1967 Autumn issue of the *Missouri Journal of Research in Music Education* an article[1] entitled "Programmed Instruction and Music Education" is published. Robert J. Hutcheson, Jr. is the author of this paper which gives an account of programmed instruction prior to 1967. It is the purpose of this article to write a resume of Hutcheson's paper and to report further developments in this field from 1967 to early 1970. An additional intent is to supply a bibliography which relates to the field of programming with regard to music education.

Hutcheson quotes Leon Dallin[2] who in a survey (1966) found that 107 of the 444 college level music departments which responded were currently using programmed materials in music. In addition, 163 reported they planned to adopt such a mode of instruction.

In an effort to show the significance of programmed instruction in music education, Hutcheson quotes William McBride and Thorndike. McBride[3] believes that the concept of programmed instruction is not new, but merely a precise organization of some of the best approaches to learning that successful teachers have used for many years. Thorndike[4] sees programming as a means of freeing the teacher from those tasks that could best be handled by a machine. A human being should not be wasted in doing what forty sheets of paper or two phonograph records could do just as well. Precisely because personal teaching is precious and can do what books and apparatus cannot, it should be saved for its peculiar work.

A brief historical introduction to programmed instruction is given by Hutcheson tracing non-programmed devices such as H. Chard's[5] device for teaching reading in 1809, and Halcyon Skinner's device for teaching spelling in 1866. Maria Montessori was found to have patented a device in 1914 to teach the proper trigger squeeze to U.S. Army recruits (1918). Sidney L. Pressey of Ohio State University is generally credited with developing practical machines that could teach as well as test. Pressey's versions were multiple-choice program devices. They immediately informed the student of the correctness or incorrectness of an answer.

Hutcheson[6] lists the following characteristics of successfully programmed instructional materials which he states are the subdivisions of concepts and the contributions of many writers:

1. The material to be learned should be presented in a logical series of steps.
2. Material to be learned should be organized and presented in the form of numerous, small, logical and graduated steps (or frames) leading from the known to the unknown.
3. A response (written or unwritten) should be elicted from the student to each (or at least most) of the frames.
4. The student should be immediately informed (feedback) of the accuracy or inaccuracy of his response to each question.
5. A hoped-for corollary of the response the student makes is that active student involvement is insured in a manner not possible in a lecture approach or any unindividualized approach.
6. The self-instructional nature of programmed materials should permit the student to determine or follow his own learning pace.
7. Machine operation should be almost completely self-contained so that a minimum of the student's attention involves pure manipulation of the operational process of the machine.
8. Feedback data allows designing improvements and making revisions from experience.
9. Individual differences should be provided for.
10. Several phases of the instructional procedure may be integrated.
11. A good program assumes an adequate philosophy of education and an understanding of the learning process.

Hutcheson states that Norman Crowder[7] has estimated that 100 to 150 hours are usually required to program adequately the material covered in an hour lecture and he quotes Philip Lewis[8] orderly outline for program preparation:

> Establish definite educational objectives for the unit or course. Identify the body of content, the skills to be developed or the processes to be involved in achieving the objectives.
>
> Divide the content area into learning increments (small bits of information or instruction, each of which can be easily mastered by the learner). The increments are also called frames.
>
> Arrange the increments in a learning sequence (simple to complex, concrete to abstract).

Insert cues and prompts in the sequence where these are deemed necessary to assist the learner.

Insert review increments as the program progresses to keep the learner refreshed on materials learned earlier.

Provide a challenge for the learner to accompany every increment. This may be a question to answer, a problem to solve, or an operation to be performed.

Arrange for the learner to have immediate knowledge of results of his response to the question or problem before he ends the next increment.

Hutcheson[9] states that "though there are several types of programming techniques, two have dominated the scene and have received most of the attention." He cites the Skinnerian (or "linear") program in which all the subjects follow the frames step by step, skipping none, and follow the same order or sequence of frames. The other format, Norman Crowder's, is termed a "branching" or the "intrinsic" approach. This design employs larger learning increments and multiple-choice answers. The alternate answers (besides the correct answer) are planned to take into account logical misinterpretations of the questions. They are not supposed to "trap" the learner, but rather to point out the area or areas wherein review or clarification is needed.

Before leaving the Hutcheson article, a list of terms pertinent to this study will be included below which he cited from an article by Charles Foltz[10] and other sources:

Glossary of Terms

AUGMENTING — A method of teaching a concept, working rule, or principle by building up to it through small sequential bits of information. As the student learns the small easily assimilated steps, he will be led to formulating this concept or principle for himself without actually seeing it written out or explained (Foltz).

AVERSIVE REINFORCEMENT — A way of negatively reinforcing a given action by an injurious or distasteful means such as spanking or subjecting a child to public ridicule for being wrong. In programming it is used to describe the technique of encouraging errors and then reinforcing the right answer by telling the student how wrong he is. (Foltz).

BRANCHING — A type of programming which has built-in alternate sequences of items for the extra-bright or slow student. If a student makes a single or a number of wrong responses, he is led through an alternate sequence of steps to give him remedial practice and new explanations of a concept he cannot immediately grasp. ("Wash back" = backwards branching). If the student demonstrates by a series of correct responses that he has quickly grasped the material, he may be skipped forward over additional material on the same subject. ("Wash ahead" = forward branching). In a sense, any departure from a sequence of items proceeding methodically towards a given learning goal. Intrinsic programming employs the branching technique. (Foltz).

CARTESIAN METHOD — A basic technique of programming devised by Descartes. It consists of breaking down a subject to be taught into its smallest component parts and then arranging these into a hierarchial order. to aid the learning process. (Foltz).

CUE — Used interchangeably with prompt to mean any bit of information added to a program item to make it easier for the student to make the correct response. One of the objects of much current research is to determine how much material should be given to a student to enable him to get the right answer. This is called the problem of cue clarity. (Foltz).

ECHOIC REINFORCEMENT — Reinforcing a student response by showing him the right answer. Merely telling him he is right or wrong is called non-echoic reinforcement. Current research indicates that echoic reinforcement is the better method of reinforcing correct answers, and leads to longer retention. (Foltz).

EXTINGUISHING — The process of forcing a student to unlearn a learned response or mode of behavior by failing to reinforce it each time it is emitted, or reinforcing it aversively or negatively. (Foltz).

FADING — The technique of lessening the number of cues or prompts as the program progresses, thus weaning the student slowly away from reliance on the program and forcing him to think more for himself. (Foltz).

FEEDBACK — A technique essential for programmed learning which gives the student (and eventually the teacher) immediate knowledge of the correctness of his answers to items in the program. This acts as a type of reinforcement to correct answers. (Foltz).

FRAME — A single step of a program usually containing information and a question to be answered in one form or another. So called because it is exactly the amount of material that will fill the space of a display panel of a self-instructional device. Used interchangeably with item. (Foltz).

HEURISTIC — Serving to guide, discover, or reveal; specifically, valuable for stimulating or conducting empirical research but unproved or incapable of proof — often used of arguments, methods, or constructs that assume or postulate what remains to be proven or that lead a person to find out for himself. (Webster New Int. Dict., 3rd Edition, 1961).

LAW OF RECENCY — A basic concept of reinforcement theory, stating that the last response reinforced is the one that is learned. A corollary is that the more rapidly a response is reinforced, the better it is learned. (Foltz).

LINEAR PROGRAMS—Also called straight-line, non-branching, or Skinnerian programs. These are programs where the sequence of items is fixed, unalterable and identical for each sequence. Crowder would call these extrinsic programs, because the rate and sequence of presentation are not built in but determined by an outside agency, the program writer or instructor. (Foltz).

MATHETIC — Of or relating to science or learning. (Webster New Int. Dict., 3rd Edition, 1961).

PINBALL MACHINE EFFECT — A phrase coined by Skinner to describe the novelty effect of learning with a self-instructional device. The use of a device or machine of any sort seems to be more interesting to the student than merely reading a text. (Foltz).

PROGRAM — The textbook of the self-instructional device. It consists of course material broken down into small, easily digestible bits and arranged in sequence to lead the students to a fundamental understanding of concepts basic to the course. (Foltz).

SELF-INSTRUCTIONAL DEVICES — Also called learning machines, teaching machines, or auto-instructional devices. This includes any device which can present systematically programmed materials while making efficient use of reinforcement. That is, it has the facilities for displaying the programmed material, offers some method for making a response and showing whether the response is correct or not. (Foltz).

SOCRATIC METHOD — The method of inquiry and instruction employed by Socrates, especially as represented in the dialogues of Plato. It consists of a series of questionings; the object of which is to elicit a clear and consistent expression of something supposed to be implicitly known by all rational beings. (Webster New Int. Dict., 2nd Edition, 1954).

STEP — This is the space between one item and another in terms of the mental operations necessary to go on to the next item. Difference in step-size is practically impossible to measure, although a subject of much theoretical dispute. The question is how much mental effort can be demanded of a student in going between one item and the next. (Foltz).

VANISHING — Both a programming technique and a factor of device design. In programming it refers to the gradual withdrawal of prompts from the program item so that the student is weaned away from reliance on the program for clues to the correct responses. In devices it is the mechanical capability of dropping out questions which have been answered correctly before. (Foltz).

Programmed Instruction in Music
1967-1970

— *Articles* —

Virginia Gore[11] believes that, "The rationale of programmed instruction rests on the same sound principles which have guided our finest teachers, principles which have stood the test of time in real teaching situations and which have been critically evaluated in numerous experimental situations."

Gore[11] gives the following characteristic features which distinguish programmed instructions from conventional teaching devices:

1. Students who need to learn very slowly may do so, while other students may move ahead rapidly.
2. Constant participation is required of the student — he makes a response to each unit ("frame") of instruction. Usually the responses are recorded.
3. The student is able to ascertain the correct answer immediately after making the response.
4. The material proceeds in small steps, each step presuming no other knowledge of the subject than that presented in preceding steps.
5. Different types of programs are available to conform to different needs. Some programs are self-contained; others make use of films, books, recordings, etc. Some programs complement classroom activities; others can be studied without a teacher.
6. Before commercial release, each program has been tried out on students, their errors analyzed and used as a basis for revision of the program.

Gore[11] concludes her article with a compilation of various "Programs in Music" which have been published and are available to the reader. A synopsis of those programs relevant to this paper (i.e., produced after 1966) will be cited in the appendix (see appendix).

Bernard Fischer,[14] in his article "Programmed Learning," gives a brief look at "How We Learn" before attempting to produce a program. He concludes that from the student's standpoint, learning can be considered as a change in behavior. Programmed learning, then, attempts to produce this change in behavior largely by emphasizing a principle called reinforcements; i.e., repeated responses or reactions to reiterated stimuli.

Fischer[15] gives the following steps for the construction of a program:

1. Develop teaching objectives in terms of behavior. Psychologists generally recognize behavior in two domains, cognitive and affective. Behavior in the cognitive domain is measurable; the affective domain cannot easily be measured.
2. Evolve a task analysis (an itemized statement of behavioral activities expected from the student) in order to fulfill the teaching objectives (e.g., a task in applied music which could be as follows: generating a special tonal effect, producing a new kind of rhythm, etc.).
3. An outline should be made consisting of all the tasks broken down into segments, each containing a single idea or action.
4. From the outline, devise instructional units called frames.
5. The frames could progress gradually in a planned, orderly manner (linear) or students could be directed to special frames (branching).

Fischer concludes his article with a method for testing and determining the validity of a program constructed according to these guidelines.

Further potential for programming and music education can be seen in an article by Ned C. Deihl and Rudolf E. Radocy[16] entitled "Computer-Assisted Instruction: Potential for Instrumental Music Education." It is their opinion that now is the natural time to turn to the machines for processing and retrieving information. It is pointed out that the computer can present material to the student, ask questions, and process responses. Linear programming is considered weak because (1) the steps are small enough so that even the slowest student can progress without difficulty; and (2) the brighter student must follow the same route. The authors are, in fact, recommending the alternate approach (branching) as opposed to the linear:

> The brighter student must follow the same route as his less competent peers. By aiming the program at a higher level,

> providing remedial material for those who cannot keep the pace or permitting the bypassing of material according to certain criteria, programs can offer much flexibility.[illegible]

Deihl and Radocy[illegible] see instrumental music generally being taught much as it was forty years ago. They suggest that the area of ear training in music theory classes should lend itself to computer-assisted instruction (CAI); self-presentation drill could supplement the traditional classroom "dictation" drills. The authors describe the purpose of their project (1967 to 1969) as developing and evaluating computer-assisted instruction in aural and visual discrimination directly related to instrumental performance. Specifically, this listening program was currently limited to articulation, phrasing, and rhythm for the clarinet at the intermediate level.

Ashford[illegible] gives an interesting account or follow-up study of an experiment conducted during an eleven-week study of the use of programmed instruction to teach certain aspects of music (Northwestern University, 1964). The general question asked was: Are there any observable long-range effects of programmed instruction in the fundamentals of music theory on the behavior of subjects? The results indicated that there were no apparent differences from teacher-classroom methods with respect to retention of material. It was noted, however, that the programmed-instruction subjects continued to perform significantly better on a three-year delayed recall examination than did the control subjects.

Leon Dallin[illegible] gives a succinct description of programming, a historical analysis, and sees a list of possibilities for future use. He found that most programmed instruction for music education during the 1950's was either in book form or was only usable with tape recorders.

> Only one music program marketed in the United States is designed for use in a special teaching machine. This is the TMI-Grolier "Fundamentals of Music" which is used in a MIN/MAX II machine, a simple device that displays the stimulus printed on 8½ by 11 inch paper and conceals the answer until the response has been made.[illegible]

Dallin[illegible] points out that in 1963 only two additional programmed texts in music were available to educators: (1) *Music Makers* by Winifred Neal; and (2) *Musical Notation* by John M. Batcheller. It is very evident in Dallin's article that much has happened since 1963. He concludes his article by compiling a list of programmed instructional materials in music.

McKay" believes that the students' individual differences and how to cope with them in a rehearsal can be a serious problem for the instrumental conductor. His answer to this problem would be the use of programmed texts. Students were allowed to check out those texts and prepare one or more lessons at their own speed, without the help of the teacher. McKay recommends the following series: (1) *Essentials of Music* by Roger E. Chapman; and (2) *Music 200* by Andrews, Maxson, and Lotzenhiser. *Essentials of Music* is a programmed text covering notation, major scales, rhythms, meters, minor scales, modes, intervals, triads, transposition, and terminology. *Music 200* is a beginning music theory course subtitled "Beginning Music Theory: Principles and Applications."

L. M. Zonka" makes use of a new teaching technique involving the use of a cassette tape recorder. Twelve studios are equipped with Woilensak cassette tape recorders which are used to record complete half-hour lessons for students. Students take their tape cassettes home and play them; and if they have any questions, they record them on the reverse side of the cassette. During the next lesson the teacher is able to answer their question.

Zonka" lists some of the advantages of this system: (1) Students are able to audibly relive seven days a week the half-hour musical experience involved in a lesson; (2) practice time at home is increased by seventy-five per cent; (3) the student is able to practice exactly as he or she was shown by the teacher (the tape cassette keeps the student from practicing bad habits); (4) improved teacher performance often results; and (5) a student of any instrument can progress seventy-five per cent faster by means of the constant audible referral which the method makes possible.

Milton S. Rudy" has an approach similar to Zonka's. Rudy, on a Title III, ESEA operational grant, has worked on a project entitled "Programmed Instruction With Tape Cassettes for Junior High School Students." He lists the following general objectives for the project:

1. The teacher will develop his role as a facilitator of learning in a changing environment rather than a passive role — one who imparts knowledge.
2. To design learning situations that will permit a student within his capabilities to make real, true, and important decisions about his own learning; provide the opportunity to evaluate the adequacy of his actions; and, finally, to diagnose his needs according to this evaluation.

3. To design flexible groups and the appropriate strategies which will give the student, while involved in the learning process, a variety of opportunities for meaningful encounters with other human beings.
4. To develop an instructional system for information retrieval and utilization which provides students and teachers with appropriate opportunities for inquiry, exploration, experimentation, and creativity according to individual needs, abilities, and goals."[27]

Rudy,[28] after a summer of testing students, organized the programs into fifteen-minute lessons. He believes that music educators cannot involve the learner without sound; each lesson, therefore, was accompanied by the most convenient audio-instructional device available, a tape cassette.

Koskey[29] gives a number of interesting ways in which programming and/or audio-visual materials can be utilized in an effort to teach music. He believes that "animated notation" (a technique used for producing cartoons) may be used in teaching rhythmic concepts, intervallic concepts (with or without sound), four-part canon, and the analysis of form (e.g. the fugue).

Koskey[30] also recommends the filmstrip, the overhead projector, radio, and television. He gives a brief account of the basic format of programming and concludes his article with a bibliography.

Programmed Ear Training 1967-1970

A great deal of research has gone into programmed ear training. Tarratus and Spohn[31] conducted an experiment to determine if a set of taped programmed interval drills, which were developed at a large midwestern university, could be used effectively in a smaller southern state college. Two groups were given a pretest to measure their ability to distinguish intervals (ascending melodic, descending melodic, and harmonic). The following tables[32] will show the results of this research:

Table 1

*Results of a t-Test of Significance of Difference Between Pretest and Posttest for the Experimental Group**

Interval Tests	*Mean Score Pretest*	*Mean Score Posttest*	*d.f.*	*t*
Ascending	13.18	17.64	10	6.43
Descending	11.78	13.64	10	1.46
Harmonic	11.82	13.78	10	2.23

*N = 11

Table 2

Results of a t-Test of Significance of Difference Between Pretest and Posttest for the Control Group

Interval Tests	*Mean Score Pretest*	*Mean Score Posttest*	*d. f.*	*t*
Ascending	13.05	16.61	17	.618
Descending	11.22	13.66	17	4.06
Harmonic	9.78	13.50	17	4.83

The conclusions were as follows: (1) college freshmen at Northwestern State College were able to learn intervals by using the taped drill method; and (2) the improvements were shown to be statistically significant.

A similar project was conducted by Jeffries[33] in an effort to test two principles: (1) the use of small steps of increasing difficulty for presentation of interval items: and (2) the effects of knowledge of results (KR) for confirming interval judgments. Interval dictation was taught solely by means of a teaching machine and tape, visual KR being provided for students' written responses. Jeffries refers to an interesting note by Maltzew[34] who tested adults' ability to judge intervals correctly. Maltzew found that intervals judged correctly the most often included the perfect octave, perfect fifth, and perfect fourth, while intervals judged correctly least often included the augmented fourth, the minor seventh, and the minor sixth. In another study by Ortmann[35] it was discovered that in writing melodic dictation, students made most errors in interval judgment where skips were involved; the number of errors increasing with pitch distance.

Jeffries[36] concludes that drilling the intervals in random order is superior to drilling in the order of increasing difficulty. The augmented fourth, minor seventh, and minor sixth were consistently the most frequently missed intervals (this was consistent with the findings of Maltzew).

Rives[37] made a study comparing the traditional and the programmed methods for developing music listening skills in the fifth grade. He gives a brief description of both methods and sets up a control group (traditional method) and an experimental group (programmed). Rives[38] concluded that the program items tended to keep the students' attention on the listening lessons in the study.

Sherman and Hill[39] used tape recorded materials in an experiment consisting of approximately 300 different exercises and tests

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([illegible] for each of the four instructional groups). The major hypotheses" underlying the investigation were:

1. Progress in the aural and visual perception of music through instruction based upon atonal organization will transfer to progress in the aural and visual perception of tonal music.
2. Students with different levels of musical ability will show equal attainment in the aural and visual perception of music under conditions of (a) selected response — aural, (b) selected response — visual, (c) constructed response — written, and (d) constructed response — vocal.
3. Students with different levels of musical ability will respond with similar attitudes toward tape-recorded self-instruction.

The unusually high degree of success achieved by the students who received laboratory and classroom instruction in contemporary practices led Sherman and Hill" to conclude that a "contemporary oriented" study is superior to "conventional theory" instruction.

Trythall" gave an account of work being done at the George Peabody College in Nashville, Tennessee. Three teaching machines were used for the purpose of developing an experimental program in intervallic, melodic, and harmonic dictation. It is interesting to note that all melodic dictation training in freshman ear training and sightsinging (Music 100A and B) was taught by means of this program. The following is an example of two of their tape designs:

Table 3

Hierarchy of Difficulty of Interval Recognition

Interval	*Rank Order (easy to difficult)*
Perfect 8	1
Major 2	2
Major 2	3
Major 3	4, 5
Perfect 4	4, 5
Perfect 5	6
Major 6	7
Major 7	8
Minor 3	9
Tritone	10
Minor 7	11
Minor 6	12

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Table 4

Tape Design for Intervallic Program

Tape	*Intervals*	*Area*
1	P1, P8, M3, m6	
2	m6, m7, P8	Adjacent discrimination of new interval in already learned context
3	P1, M3, m6, m7, P8	Summary
4	M3, T, m6	Adjacent discrimination of new interval
5	P1, M3, T, m6, m7, P8	Summary
6	m3, M3, T	Adjacent discrimination of new interval
7	P1, m3, M3, T, m6, m7, P8	Summary
8	m6, m7, M7	Adjacent discrimination of new interval
9	P1, m3, M3, T, m6, m7 M7, P8	Summary
10	m6, M6, m7	Adjacent discrimination of new interval
11	P1, m3, M3, T, m6, M6, m7, M7	Summary
12	T, P5, m6	Adjacent discrimination of new interval
13	P1, m3, M3, T, P5, m6, M6, m7, M7	Summary
14	M3, P4, T, P5	Adjacent discrimination of new interval
15	P1, m3, M3, P4, T, P5, m6, M6, m7, M7	Summary
16	M2, m3, M3	Adjacent discrimination of new interval
17	P1, M2, m3, M3, P4, T, P5, m6, M6, m7, M7, P8	Summary
18	m2, M2, m3	Adjacent discrimination of new interval
19	All intervals	Summary

Similar tables exist for Major and minor melodic dictation and harmonic dictation (see article," pp. 275-277). In 1968 the program had already existed for three years; the greatest number of students was then found in the highest grade area.

Further studies by Hewlett and Carlsen show the continued growth and experimentation with regard to the aural aspects of music and programming. Hewlett" was unable to give very much substantial information, partly due to the fact that a number of his students dropped the program and others were lost between semesters. Carlsen," on the other hand, in an effort to test the hypothesis both for the effectiveness and efficiency of programmed instruction as a means for developing aural perception of music in context, concluded the following:

> It was not possible to derive causation for accuracy or for inaccuracy in the perceptual task for any of the concepts, principally because of the heuristic process utilized in developing the perceptual materials. The fact that a number of melodies varying in complexity and arranged in some semblance of hierarchial order can be empirically shown to progress a subject to a higher level of perceptual ability does not in itself help to identify the nature of the complexity of the material, nor how that complexity relates to the development of an individual's perceptual style, nor how the independent elements within the complex material take on an interrelationship of effects.

Music Theory and Programming

Nelson[45] conducted an interesting study which was designed to evaluate the effects of the use of programmed analyses of musical works as an instructional tool in the development of nonmusic majors' perception of form and structure. He lists two principal barriers that hinder the nonmusic major: (1) inability to read adequately an orchestra score, and (2) a low level of aural discriminating power. Nelson believes that, "A program of the analysis of a composition accompanied by taped audio cues as well as the usual score references seems to hold promise as a testing device in out-of-class assignments."[46]

Nelson[47] expected that those students that completed the programmed analysis project would demonstrate a greater preference for music classified as "absolute" (an art which is complete in its own form, meaning, and beauty without dependence on some external reference) than students not exposed to this program. Three linear-constructed programs of symphonic movements were constructed: (1) rondo, (2) sonata-allegro, and (3) the theme and variations design. The control and experimental groups were assigned these compositions and were tested on a subsequent date. Each test was constructed to measure the following five skills:

1. *Rhythm.* The ability to hear basic rhythmic and metric patterns, and deviations from them.
2. *Melodic structure.* The ability to perceive and identify melodic subjects as thematic material, connecting passages, new material and relationships of melodic patterns to each other.

3. *Harmony and tonality.* The ability to perceive harmonic modifications and variations and be able to sense tonality and departures from tonality reference points.
4. *Timbre.* The ability to identify tonal characteristics of choirs of instruments and tonal variations in a single instrument (e.g., the first violin section). This skill may be considered synonymous with awareness of the dimension of orchestration.
5. *Knowledge of general form.* The ability to identify large patterns of a work and the relationship of smaller units to the whole. This skill includes a demonstration of knowledge of the particular form under study without aural reference to the music.[48]

Fink's[49] experiment with regard to programmed part writing is an effort to determine "the feasibility of teaching the basic craft of chord connection by means of a self-instructional workbook."[50] The following table[51] shows the results of his experiment:

Table 5

Mean Scores for Pretest, Posttest, and Follow-up Test

Group	*Pretest*	*Posttest*	*Follow-up Test*
Experimental	21.705	84.632	94.54
Control	23.438	70.938	82.87
Difference	1.733	13.694	11.67

The author concluded that the results of the experiment indicated that subjects learned the basic craft of chord connection effectively by means of self-instructional materials. It also appeared that, for the subjects involved, programmed learning can be a more time-consuming method than the traditional method (teacher-classroom approach).

Andrews'[52] experimental objective was to determine whether or not students in secondary school performing groups could learn music theory using self-instructional materials. A programmed textbook, an accompanying album of records, and a teacher's guide were used in the project. Topics covered in the textbook were the following:

> Meter, rhythm, tempo, note recognition (treble and bass clef), intervals, scales, key signatures, major and minor scales, modes, musical terms (tempo and dynamic), triads, chord progressions, harmonization of melodies, and timbre of the various orchestral instruments.[53]

In testing his eight hypotheses, Andrews[54] was able to conclude that the study of the theoretical aspects of music important for students in performing groups can achieve significantly better results by using materials of the type described and used during his project.

Hargiss[55] developed a programmed textbook in music theory for a music course required of students preparing to be elementary teachers. The following groups were utilized in the experiment:

> *Group* 1. received face-to-face instruction but no programmed instruction.
>
> *Group* 2. used a tentative program and participated in revising and rearranging it.
>
> *Group* 3. used the program and received no face-to-face instruction.
>
> *Group* 4. participated in further revision of the material.
>
> *Group* 5. used the final version of the program and received no face-to-face instruction.
>
> *Results*. indicated that Group 2 achieved more than the other groups. Group 5 learned as much as Group 1 and in less time.[56]

Those students in Group 2 were found to be the most successful in acquiring those skills in music theory considered essential to elementary teachers.

Another successful experiment conducted by Nelson,[57] and an article concerning the need for programmed instruction in theory by Harder,[58] led this writer to concur that programmed theory does have an important place in music education.

Other Uses of Programmed Instruction

In researching this paper the writer found a variety of experiments other than those more usual ones, being conducted in the area of "programming and music." For instance, in the field of "score and/or music reading," research has been conducted by Sidnell[59] and Dallin.[60] Sidnell[61] attempts to facilitate the growth of score reading skills of student conductors while Dallin[62] programs a text for learning to sing and play while serving as a point of departure for intelligent listening.

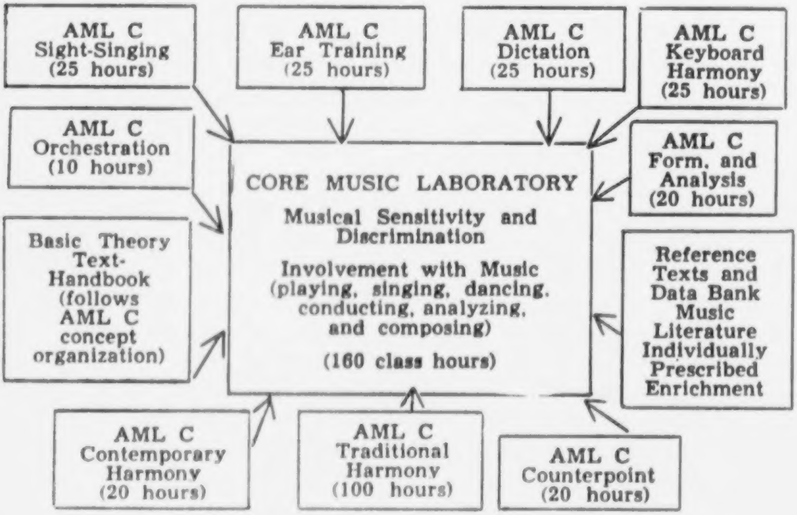
An experiment was conducted by Bigham[63] with regard to the learning of woodwind fingerings. Bigham[64] found the results of the programmed text to teach fingerings favorable and student response enthusiastic.

This writer, in addition to the preceding experiments, found a variety of research concerning programmed instruction which included: (1) instrument repair — Diamond;[65] (2) experiments in Germany — Eicke;[66] (3) effects of programming on uncooperative attitudes and/or behavior — Steele;[67] (4) the teaching of piano — Ellingson[68] and Broune;[69] (5) automated centers in the colleges and universities — Allvin;[70] and (6) experiments in the elementary grades — Wardenburg.[71]

Allvin[70] gives the following table as an illustration of how a music curriculum could be reorganized. All basic skills would be taught through programmed lessons, computer assistance, and other instructional media. The computer assumes the role of teacher in some skill development and serves as instructional manager for learning through other media. This writer found this to be one of the most interesting proposals encountered during the research of this paper.

Table 6

Reorganized Music Curriculum (Lower Division Basic Musicianship Taught in Automated Music Learning Center)


AML C Sight-Singing (25 hours)
AML C Ear Training (25 hours)
AML C Dictation (25 hours)
AML C Keyboard Harmony (25 hours)
AML C Orchestration (10 hours)
CORE MUSIC LABORATORY
Musical Sensitivity and Discrimination
Involvement with Music (playing, singing, dancing, conducting, analyzing, and composing)
(160 class hours)
AML C Form, and Analysis (20 hours)
Basic Theory Text-Handbook (follows AML C concept organization)
Reference Texts and Data Bank Music Literature Individually Prescribed Enrichment
AML C Contemporary Harmony (20 hours)
AML C Traditional Harmony (100 hours)
AML C Counterpoint (20 hours)

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Smith[73] indicated that there was a need for experimental evaluation in the area of programmed instruction. Smith, in order to conduct his experiment, chose Kanable's *A Program for Self-Instruction in Sight Singing*. To assess the effectiveness of the program, a test was devised, evaluated and administered to fifty-two freshman music students at the Florida State University. The students were then assigned to four groups on the basis of pre-test scores. Group I studied the Kanable program while Group II was taught by another instructor in the classroom. The author concluded the following:

> The results of this study indicate that there is no significant difference in improvement in sight singing performance by students who receive (1) programmed instruction, (2) classroom instruction, or (3) no instruction.
>
> It was further concluded on the basis of this study that regardless of instructional procedures, sight singing performance does not improve . . . [74]

Newman[75] conducted an experiment designed to investigate the effects of programmed learning on achievement and attitude in a music course for classroom teachers. Three questions[76] were considered:

1. Do programs lead to higher achievements in terms of usual examinations for classroom music courses?
2. Are programs better used as a supplement or as a substitue for regular instruction?
3. Do programs lead to more favorable attitudes toward the course and its objectives?

Newman[77] concluded that (1) programming may lead to higher achievements; (2) if used as a supplement to conventional presentation, it might have a slightly detrimental effect; (3) it will help conserve class time; and (4) it may lead to greater satisfaction among the students.

Rizzolo[78] did a study designed to test the ability of the music student to improve his recognition of intonation errors by use of a prerecorded magnetic tape. The purpose of the study[79] was to discover to what extent the following was accomplished: (1) improve sensitivity to errors of intonation; and (2) improve recognition of intonation errors in triads and chords.

His findings were: (1) the results did not indicate the experimental method superior to the traditional one, and (2) further research was recommended.[80]

Neal O'Neal[81] conducted a study of string techniques using a programmed course with a heterogenous string methods class. The study was divided into two parts:[82]

1. A programmed textbook was developed for the heterogeneous string methods class. This was basically a Skinnerian type program dealing with five aspects of string techniques: (a) nomenclature, (b) posture, (c) tone production, (d) bowings, and (e) fingerings.
2. The second part of the study consisted of a statistical evaluation of the efficacy of the textbook in an experimental situation.

Dissertations were also written by Costanza[83] concerning programming and score reading, and Schmalsteig[84] concerning the singing of correctly produced and uniform vowels.

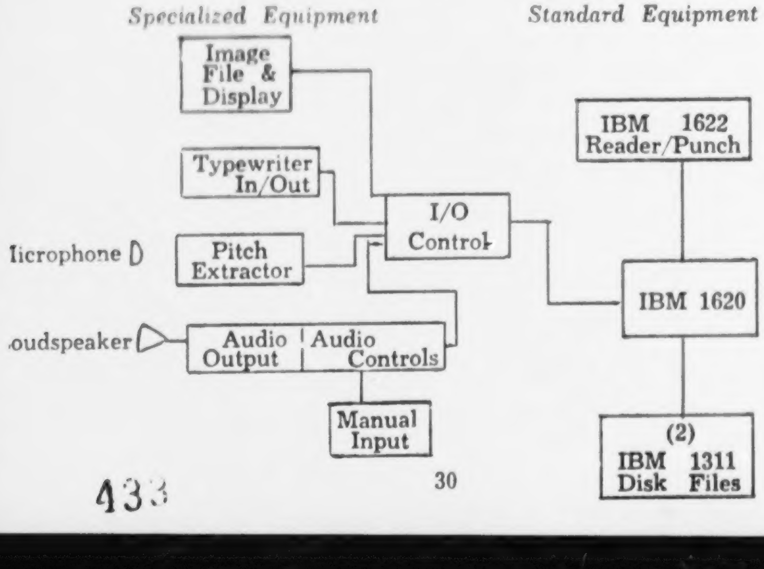
Conclusions and Recommendations

Kuhn and Allvin[85] refer to Spohn's[86] and Carlsen's[87] incorpation of techniques used in foreign language laboratories into the field of music. "Spohn developed new methods for the self-presentation of elemental materials for music, using methods and facilities of foreign language laboratories."[88] "Carlsen investigated certain variables pertaining to the development of melodic dictation ability by means of programmed learning."[89]

Kuhn and Allvin[90] give the following illustration of a computer-assisted teaching system for music learning which is being evaluated at Stanford University:

Table 7

Experimental Music Instruction System


Specialized Equipment
Standard Equipment
Image File & Display
Typewriter In/Out
icrophone
Pitch Extractor
oudspeaker
Audio Output
Audio Controls
Manual Input
I/O Control
IBM 1622 Reader/Punch
IBM 1620
(2) IBM 1311 Disk Files

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The existing experimental model consists of an IBM 1620 computer programmed to carry out an instructional sequence and fitted with a typewriter-like input and output, a rapid selection image file, and an experimental pitch extraction device. To this will be added a four-channel tape recorder with search capabilities.[11]

The reliability and potential of the device is rated good for the following reasons:[12] (1) in doubtful cases the system will give no report on the student's performance, rather than an erroneous one; (2) provides the structure for an instructional sequence; (3) curriculum items and exercises can be changed rather simply (variety); (4) can have programs for beginning, intermediate, or advanced students; (5) possibility for branching; and (6) allows the student to proceed at his own rate.

Hargiss[13] believes that students really do learn from programmed instruction. Research has proven this to be somewhat true if not conclusive. In comparing the traditional (teacher) to the experimental (programming), Hargiss concludes that a combination of the two is best. This writer agrees and believes that further research should seek ways to use the combination of the two rather than see which is better. In these complicated days of automation, the population explosion (possible increase of teacher-student ratio), and the quantity and diversity of knowledge that needs to be consumed, teachers will, in fact, need all the help they can get. Programming is probably here to stay.

Footnotes

1 Robert J. Hutcheson, Jr., "Programmed Instruction and Music Education," Missouri Journal of Research in Music Education, Autumn 1967, p. 9.

2 Leon Dallin, "A Survey of Programmed Music Teaching Materials," Music Educators Journal, February-March, 1960, pp. 198-200.

3 Robert A. Barnes, Fundamentals of Music: A Program for Self-Instruction (New York: McGraw-Hill Book Co., 1964), p. v.

4 E. L. Thorndike, Education (New York: The Macmillan Company, 1912), pp. 165-67.

5 Wayne Lee Garner, Programmed Instruction (New York: Center for Applied Research in Education, 1966), p. 8.

6 Hutcheson, pp. 11-14.

7 Genevieve Hargiss, "The Development and Evaluation of Self-Instructional Materials in Basic Music Theory for Elementary Teachers," Council for Research in Music Education, Winter 1965, p. 2.

8 Philip Lewis, "Teaching Machines Have the Beat," Music Educators Journal, November-December 1962, p. 94.

9 Hutcheson, pp. 15-16.

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10 Charles I Foltz, "The World of Teaching Machines," (Washington: Electronic Teaching Laboratories, 1961), p 18 Also see Eugene Galanter (ed) **Automatic Teaching: The State of the Art** (John Wiley and Sons, 1959), p 46

11 Virginia Gore, "Programmed Instruction in Music," **Music Journal**, September, 1969, p 64

12 Ibid , pp 64 and 84

13 Ibid , pp 85-87 and 105

14 Bernard Fischer, "Programmed Learning," **The American Music Teacher**, September-October, 1968, p 43

15 Ibid

16 Ned C Deihl and Rudolf E Radocy, "Computer-Assisted Instruction: Potential for Instrumental Music Education," **Council for Research in Music Education**, Winter, 1969, p 2

17 Ibid

18 Ibid , p 3

19 Theodore H A Ashford, "Some Long-Range Effects of Programmed Instruction in Music," **Journal of Research in Music Education**, Winter, 1968, pp 339 and 344

20 Leon Dallin, "Music Educators Should Get With the Program," **Music Educators Journal**, March, 1969, p 50

21 Ibid , p 51

22 Ibid

23 Martin McKay, "Individual Achievement Without Individual Attention," **The Instrumentalist**, May, 1969, p 32

24 L M Zonka, "New Tape Recorder Teaching Technique Improves Effectiveness of Music Education," **The School Musician**, October, 1969, p 59

25 Ibid , p 77

26 Milton S Rudy, "Programmed Instruction with Tape Cassettes for Junior High School Students," (unpublished - Ferguson-Florissant School District, Missouri), 28 pages

27 Ibid , p 2

28 Ibid , p 26

29 B Eugene Koskey, "Music and the Media," **Music Journal**, September, 1967, p 64

30 Ibid , p 72

31 Edward A Tarratus, Jr and Clark L Spohn, "Cooperative Research in Programmed Learning: Taped Interval Discrimination Drills," **Journal of Research in Music Education**, Fall, 1967, pp 210-211

32 Ibid , p 213

33 Thomas B Jeffries, "The Effects of Order of Presentation and Knowledge of Results on the Aural Recognition of Melodic Intervals," **Journal of Research in Music Education**, Fall, 1967, p 179

34 Catharina V Maltzew, "Das Erkennen Sukzessiv Gebener Musikalischer Intervalle in den Äusseren Tonregionen," **Zeitschrift für Psychologie**, Vol LXIV (1913), pp 161-257

35 Otto Ortmann, "Problems in the Elements of Ear Dictation," **Research Studies in Music, No 2** (Baltimore, Maryland: Peabody Conservatory of Music, 1934)

36 Jeffries, p 190

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37 James A. Rives, "A Comparative Study of Traditional and Programmed Methods for Developing Music Listening Skills in the Fifth Grade," Journal of Research in Music Education, Summer, 1970, pp. 126-128.

38 Ibid., pp. 132-133.

39 Robert Sherman and Robert Hill, "Aural and Visual Perception of Melody in Tonal and Atonal Music Environments," Council of Research in Music Education, Fall, 1968, pp. 1-2.

40 Ibid., p. 3.

41 Ibid., p. 9.

42 Gilbert Trythall, "Observations on Music Dictation Programming," Journal of Research in Music Education, Fall, 1968, pp. 267 and 272-273.

43 Rex J. Hewlett, "An Investigation of the Effectiveness of Two Methods of Student Response Using a Taped Program of Practice Materials for Improving Aural Discrimination," Reviewed by Edward L. Rainbow, Council for Research in Music Education, Winter, 1969, pp. 52-55.

44 James C. Carlsen, "Developing Aural Perception of Music in Context," Journal of Research in Music Education, Spring, 1969, pp. 45 and 49.

45 Carl B. Nelson, "The Effectiveness of the Use of Adjunct Programmed Analyses of Musical Works on Student Perception of Form," Council for Research in Music Education, Spring, 1967, p. 29.

46 Ibid.

47 Ibid., pp. 33 and 36.

48 Ibid., p. 38.

49 Robert R. Fink, "Programmed Part Writing," Journal of Research in Music Education, Summer, 1967, p. 159.

50 Ibid, p. 161.

51 Ibid., p. 162.

52 J. Austin Andrews, "Development and Trial of a Basic Course in Music Theory Using Self-Instructional Materials to Supplement Training Received in High School Performance Groups," Council for Research in Music Education, Winter, 1968, p. 19.

53 Ibid.

54 Ibid., p. 23.

55 G. Hargiss, "Self Instructional Material in Basic Music," Journal of Research in Music Education, Spring, 1968, p. 73.

56 Ibid.

57 Carl B. Nelson, "Programmed Analyses of Musical Works: An Experimental Evaluation," Council for Research in Music Education, Fall, 1968, pp. 11-29.

58 Paul Harder, "Programmed Instruction in Music Theory," The American Music Teacher, February-March, 1969, pp. 33 and 47.

59 Robert G. Sidnell, "The Development of Self Instructional Drill Materials to Facilitate the Growth of Score Reading Skills of Student Conductors," Council for Research in Music Education, Summer, 1967, p. 1.

60 Leon Dallin, reviewed by Sara Holroyd, "Introduction to Music Reading: Program for Personal Instruction," Journal of Research in Music Education, Summer, 1967, p. 168.

61 Sidnell, pp. 1-6.

62 Dallin, p. 168.

63 William M. Bigham, "A Comparison of Two Response Modes in Learning Woodwind Fingerings by Programmed Texts." Journal of Research in Music Education, Spring, 1970, pp. 70-71.

64 Ibid., p. 79.

65 Robert M. Diamond, "Instrument Repair - The Programmed Independent Learning Approach," The Instrumentalist, September, 1970, pp. 46-47.

66 K. E. Ficke, "Experimental Research in Germany," Journal of Research in Music Education, Spring, 1969, pp. 152-56.

67 A. L. Steele, "Programmed Use of Music to Alter Uncooperative Problem Behavior," Journal of Music Therapy, IV (1968), 103-07.

68 D. Ellingson, "Automated Teaching System for Functional Piano Skills," Missouri Journal of Research in Music Education, V (1966), 7-13.

69 J. Broune, "The Piano: Two Lectures for Teachers," Music Teacher and Piano Student, May, 1969, p. 21.

70 R. L. Allvin, "Do Colleges and Universities Need an Automated Music Learning Center?" Council for Research in Music Education, Summer, 1970, p. 32.

71 Robert Wardenburg, "An Experiment in Programming Rudiments of Music for Fifth Grade Students Compared to Conventional Instructional Methods," Missouri Journal of Research in Music Education, II, No. 3 (1969), 68-79.

72 Allvin, p. 34.

73 J. C. Smith, A Performance Test of Kanable's "A Program for Self-Instruction in Sight Singing," Dissertation Abstracts, December, 1968, 29: 1921A-2A.

74 Ibid.

75 Grant Howard Newman, "The Effects of Programmed Learning on Achievement and Attitudes in a Music Course for Classroom Teachers," Dissertation Abstracts, May, 1967, (27: 3895A-6A, Order No. 67-6689).

76 Ibid.

77 Ibid.

78 Ralph Rizzolo, "An Experimental Taped Program to Improve Sensitivity to Intonation," (LC 69-16, 882; DA XXX, 4, 1591-A).

79 Ibid.

80 Ibid.

81 Neal O'Neal, "The Development of a Concept of String Techniques by a Programmed Course of Instruction for the Heterogeneous String Methods Class," (LC69-16, 389; DA XXX, 4, 1590-A).

82 Ibid.

83 Anthony Costanza, "The Development and Evaluation of Programmed Instruction in Score Reading Skills," (LC 69-14, 502; DA XXX, 3, 1193-A).

84 Emily Schmalsteig, "The Development and Evaluation of Programmed Instruction in Singing Correctly Produced Uniform Vowels," (Ed.D. Music Education, Pennsylvania State University).

85 Wolfgang E. Kuhn and Raynold L. Allvin, "Computer-Assisted Teaching: A New Approach to Research in Music," Journal of Research in Music Education, Winter, 1967, p. 305.

86 Charles Spohn, "An Exploration in the Use of Recorded Teaching to Develop Aural Comprehension in College Music Classes," Journal of Research in Music Education, XI (Fall, 1963), 91-98.

BEST COPY AV

87 James C. Carlsen, "An Investigation of Programmed Learning in Melodic Dictation by Means of a Teaching Machine Using a Branching Technique of Programming" (Ph.D. dissertation, Northwestern University, 1962). "Programmed Learning in Melodic Dictation," Journal of Research in Music Education XII (Summer, 1964), 139-148. See Also "The Role of the Programmed Instruction in the Development of Musical Skills" Comprehensive Musicianship (Washington, D.C.: MENC, 1965), 29-36.

88 Kuhn and Allvin, p. 305.

89 Ibid.

90 Ibid., pp. 306-307.

91 Ibid.

92 Ibid.

93 Genevieve Hargiss, "The State of the Program," Council for Research in Music Education, Winter 1968, p. 37.

Bibliography

A. Books

Barnes, R. A. Fundamentals of Music: A Program for Self-Instruction. New York: McGraw-Hill Book Co., 1964.

Foltz, Charles I. The World of Teaching Machines. Washington: Electronic Teaching Laboratories, 1961.

Garner, Wayne Lee. Programmed Instruction. New York: Center for Applied Research in Education, The Library of Education, 1966.

Thorndike, E. L. Education. New York: The Macmillan Company, 1912.

B. Articles, Periodicals, etc.

Allvin, R. L. "Do Colleges and Universities Need an Automated Music Learning Center?" Council for Research in Music Education, No. 21 (Summer, 1970), 32.

Andrews, Austin J. "Development and Trial of a Basic Course in Music Theory Using Self-Instructional Materials to Supplement Training Received in High School Performance Groups." Council for Research in Music Education, No. 12 (Winter, 1968), 19.

Ashford, Theodore H. A. "Some Long-Range Effects of Programmed Instruction in Music." Journal of Research in Music Education, No. 4 (Winter, 1966), 339 and 344.

Bigham, William M. "A Comparison of Two Response Modes in Learning Woodwind Fingerings by Programmed Texts." Journal of Research in Music Education, XVIII, No. 1 (Spring, 1970), 70-71.

Browne, J. "The Piano: Two Lectures for Teachers," Music Teacher and Piano Student, May, 1969, p. 21.

Carlsen, James C. "Developing Aural Perception of Music in Context." Journal of Research in Music Education, No. 1 (Spring, 1969), 45 and 49.

Dallin, Leon. "A Survey of Programmed Music Teaching Materials." Music Educators Journal, February-March, 1960, 198-200.

————. "Music Educators Should Get With The Program." Music Educators Journal, 55 (March, 1969), 50.

————. "Introduction to Music Reading: Program for Personal Instruction." Book Review, Journal of Research in Music Education, XV, No. 2 (Summer, 1967), 168.

Deihl, Ned C. and Rudolf E. Radocy. "Computer-Assisted Instruction: Potential for Instrumental Music Education." Council for Research in Music Education, No. 15 (Winter, 1969), 2.

ILABLE

Diamond, Robert M. "Instrument Repair - The Programmed Learning Approach." **The Instrumentalist**, XXV, No. 2 (September, 1970), 46-47.

Eicke, K. E. "Experimental Research in Germany." **Journal of Research in Music Education**, XVII, No. 1 (Spring, 1969), 152-156.

Ellingson, D. "Automated Teaching System for Functional Piano Skills." **Missouri Journal of Research in Music Education**, No. 5 (1966), 7-13.

Fink, Robert R. "Programmed Part Writing." **Journal of Research in Music Education**, XV, No. 2 (Summer, 1967), 159.

Fischer, Bernard. "Programmed Learning." **The American Music Teacher**, XVIII, No. 1 (September-October, 1968), 43.

Gore, Virginia. "Programmed Instruction in Music." **Music Journal**, XXVII, No. 7 (September, 1969), 64.

Harder, Paul. "Programmed Instruction in Music Theory." **The American Music Teacher**, No. 4 (February-March, 1969), 33 and 47.

Hargiss, Genevieve. "The Development and Evaluation of Self-Instructional Materials in Basic Music Theory for Elementary Teachers." **Council for Research in Music Education**, No. 4 (Winter, 1965), 2.

————. "Self-Instructional Material in Basic Music." **Journal of Research in Music Education**, No. 1 (Spring, 1968), 72.

————. "The State of the Program." **Council for Research in Music Education**, No. 12 (Winter, 1968), 37.

Hewlett, Rex J., reviewed by Edward L. Rainbow. "An Investigation of the Effectiveness of Two Methods of Student Response Using a Taped Program of Practice Materials for Improving Aural Discrimination." **Council for Research in Music Education**, No. 15 (Winter, 1969), 52-55.

Hutcheson, Robert J. "Programmed Instruction and Music Education." **Missouri Journal of Research in Music Education**, II, No. 1 (Autumn, 1967), 9-34.

Jefferies, Thomas B. "The Effects of Order of Presentation and Knowledge of Results on the Aural Recognition of Melodic Intervals." **Journal of Research in Music Education**, XV, No. 3 (Fall, 1967), 179 and 190.

Koskey, B. Eugene. "Music and the Media." **Music Journal**, September, 1967, p. 64.

Kuhn, Wolfgang E. and Raynold L. Allvin. "Computer-Assisted Teaching: A New Approach to Research in Music." **Journal of Research in Music Education**, Vol. XV, No. 4 (Winter, 1967), 305.

Lewis, Philip. "Teaching Machines Have the Beat." **Music Educators Journal**, November-December, 1962, pp. 94-98.

Maltzew, Catharina V. "Das Erkennen Sukzessiv Gebener Musikalischer Intervalle in den ausseren Tonregionen." **Zeitschrift für Psychologie**, LXIV (1913), 161-257.

McKay, Martin. "Individual Achievement Without Individual Attention." **The Instrumentalist**, No. 10 (May, 1969), 32.

Nelson, Carl B. "The Effectiveness of the Use of Adjunct Programmed Analysis of Musical Works on Student Perception of Form." **Council for Research in Music Education**, No. 9 (Spring, 1967), 29.

————. "Programmed Analyses of Musical Works: An Experimental Evaluation." **Council for Research in Music Education**, No. 14 (Fall, 1968), 11-29.

Ortman, Otto. "Problems in the Elements of Ear Dictation." **Research Studies in Music**, No. 2 (Peabody Conservatory of Music, 1934).

Rives, James A. "A Comparative Study of Traditional and Programmed Methods for Developing Music Listening Skills in the Fifth Grade." **Journal of Research in Music Education**, XVIII, No. 2 (Summer, 1970), 126-128.

BEST COPY AVAILAB

Rudy, Milton S. "Programmed Instruction With Tape Cassettes for Junior High School Students." (unpublished. Ferguson-Florissant School District, Missouri).

Sherman, Robert and Robert Hill. "Aural and Visual Perception of Melody in Tonal and Atonal Music Environments." Council of Research in Music Education, No. 14 (Fall, 1968), 1-2.

Sidnell, Robert G. "The Development of Self Instructional Drill Materials to Facilitate the Growth of Score Reading Skills of Student Conductors." Council for Research in Music Education, No. 10 (Summer, 1967), 1.

Steele, A. L. "Programmed Use of Music to Alter Uncooperative Problem Behavior." Journal of Music Therapy, No. 4 (1968), 103-107.

Tarratus, Edward A. and Charles L. Spohn. "Cooperative Research in Programmed Learning: Taped Interval Discrimination Drills." Journal of Research in Music Education, XV, No. 3 (Fall, 1967), 210-211.

Trythall, Gilbert. "Observations on Music Dictation Programming." Journal of Research in Music Education, No. 3 (Fall, 1968), 267 and 272-273.

Wardenburg, Robert. "An Experiment in Programming Rudiments of Music for Fifth Grade Students Compared to Conventional Instructional Methods." Missouri Journal of Research in Music Education, II, No. 3 (1969), 68-79.

Zonka, L. M. "New Tape Recorder Teaching Techniques Improve Effectiveness of Music Education." The School Musician, IV, No. 2 (October, 1969), 59.

C. Dissertation Abstracts

Carlsen, James C. "An Investigation of Programmed Learning in Melodic Dictation by Means of a Teaching Machine Using a Branching Technique of Programming." Dissertation Abstracts, Ph.D. Northwestern University, 1962.

Costanza, Anthony. "The Development and Evaluation of Programmed Instruction in Score Reading Skills." Dissertation Abstracts (LC 69-14, 502, DA XXX, 3, 1193-A) Ed.D. Pennsylvania State University, 1968.

Newman, Grant Howard. "The Effects of Programmed Learning on Achievement and Attitudes in a Music Course for Classroom Teachers." Dissertation Abstracts (27: 3695A-6A, Order No. 67-6689) Ed.D. University of Illinois, 1966.

O'Neal, Neal. "The Development of a Concept of String Techniques by a Programmed Course of Instruction for the Heterogeneous String Methods Class." Dissertation Abstracts (LC 69-16, 189, DA XXX, 4, 1590-A) Ph.D. Florida State University, 1968.

Rizzolo, Ralph. "An Experimental Taped Program to Improve Sensitivity to Intonation." Dissertation Abstracts (4C 69-16, H82, DA XXX, 4, 1591-A) Ed.D. Arizona State University, 1969.

Schmalsteig, Emily. "The Development and Evaluation of Programmed Instruction in Singing Correctly Produced, Uniform Vowels." (Ed.D. Music Education) Pennsylvania State University.

Smith, J. C. A Performance Test of Kanable's "A Program for Self-Instruction in Sight Singing." Dissertation Abstracts (29: 1921-2A) Ph.D. Florida State University, 1968.

Spohn, Charles. "An Exploration in the Use of Recorded Teaching to Develop Aural Comprehension in College Music Classes." Dissertation Abstracts, Ph.D. Ohio State University, 1959. See also: Journal of Research in Music Education, XI (Fall, 1963), 91-98.

Appendix

The following programs were included in an article by Virginia Gore ("Programmed Instruction in Music," Music Journal, September, 1969, p. 85). Only those programs concluded after 1966 and not already included in this paper will be quoted.

Programs in Music:

1. **A New Approach to Ear Training** by Leo Kraft (Queens College, City University of New York; W. W. Norton and Co., Inc., 1967. 32 magnetic tapes $135.00 (rental $10.00); Workbook $2.95; Instructor's Manual. Four units (each contains practice lesson, seven lessons, review, and test) plus a few lessons on special problems.

2 **Classroom Melody Instruments** by Les Woolflin (Southern Illinois University). Scott, Foresman and Co., 1967. Fingerings, practice pieces, explanations for rhythm, etc. for the tonette, flutophone, song flute, and recorder. Ten lessons: pieces for groups of instruments; indexes for fingering, rhythms, meters, and pieces.

3 **Essentials of Music** by R. Chapman. Doubleday, 1967. 350 pages, $5.95.

4 **Foundations in Music Theory** by Leon Dallin (California State College, Long Beach). Wadsworth Publishing Company, Inc., 1967.

5 **Introduction to Music Fundamentals** by J. Austin Andrews (Eastern Washington State University), and Jeanne Foster Wardian (Whitworth College). Appleton-Century-Crofts, 1967, $3.95. Programmed text, linear presentation, 172 pages, 498 frames.

6 **Music for Elementary Teachers**, A Programmed Course in Basic Theory and Keyboard Conducting, by Genevieve Hargiss (University of Kansas). Appleton-Century-Crofts, 1968. Only three of the eleven chapters are programmed.

7 **First Steps to Harmony**, 1967. $3.75. 90 pages, 236 frames. Review of triads, part writing, voice leading, and principles of part writing.

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MUSIC EDUCATION AND THE BLIND

Joan Theis Gagnepain
Washington University

Acknowledgements

The author is deeply grateful to the many people whose help and suggestions made this research and study possible. Most of the information sought was not available in local libraries, so the assistance of the following people in reality made this paper possible.

Special thanks is given to Mr. Harold Walton, Director of the Senior High Band for the Missouri School for the Blind, for his suggestions for initial contacts with persons in various areas of the field and for his continued interest, aid and patience; to Mr. Joseph Levine, Research Associate with the Learning Systems Institute and the Department of Elementary and Special Education, College of Education, Michigan State University, for information concerning new instructional materials for the blind; and to Mrs. Mary Mylecraine, Music Reference Librarian, Division for the Blind and Physically Handicapped, Library of Congress, Washington, D.C., for information concerning music for the blind and institutions and agencies involved in the dissemination of materials and/or instruction in this field.

The author also wishes to thank the following people for their suggestions, views, and aid: Janice Avery, Braille Music Specialist, Library of Congress; Marjorie S. Hooper, Editor, American Printing House for the Blind, Louisville, Kentucky; Bill McKinney, Consultant, Instructional Materials Center, Indiana School for the Blind, Indianapolis, Indiana; Mr. McQuie, Guidance Counselor, Missouri School for the Blind; Julia Raymond, Instructor of Elementary School Music, Missouri School for the Blind; Martha J. Venturi, Educational Consultant, Instructional Materials Services, Division of Special Education, Columbus, Ohio; and Mrs. Jane K. Walline, Consultant, Special Education, Department of Education, Lansing, Michigan. A final word of gratitude is extended to Mr. Lawrence B. Hapeman, Principal of the Missouri School for the Blind and Mr. Fischer, Instructor of Music at the School, for their overall criticism and/or updating of the paper where necessary.

History of Education for the Blind

The earliest movements to benefit and then to educate the blind had their origin in Paris, France. It was there in 1260 that King Louis IX founded the Hospice des Quinze-Vingts to care for some three hundred blind people.[1]

However, by the eighteenth century the blind, for the most part, remained a pitiable class of destitute beggars. It was at this time that Diderot wrote his "Lettre sur les aveugles a l'usage de ceux qui voient," (Letter on the blind for the use of them who see). Because of this speculation (at that time considered extremely revolutionary by the ecclesiastical authorities), concerning ways in which blindness affected the intellectual and moral nature of man, Diderot was sent to the Bastille for three months.[2]

The interest generated by this letter (published in 1747, according to the Harvard Study of 1933), which did not deny the presence of intellectual ability in a being denied the sense of sight, stimulated the beginning of an active, but abstract and philosophical interest in the blind.[3]

Largely through contact with a remarkably trained blind Viennese pianist, organist, composer, and singer named Maria Theresa von Paradis, the philanthropist, Valentin Hauy was encouraged to found the first school for the blind in the 1780's called the "Institute Nationale des Jeunes Aveugles."[4]

Other similar institutions appeared in Germany and England and in 1829 the first such institution was founded in the United States. Designated originally as "The New England Asylum for the Blind," it is known today as the Perkins Institution and Massachusetts School for the Blind.[5]

Other such pioneer institutions appeared in the 1830's in New York and Philadelphia. At first supported by public charity, these and the other schools organized later for the blind are, for the most part, at present recognized as part of the states' responsibilties.[6]

Originally, educational institutions for the blind were strictly residential schools. Today, according to the March 1969 revision of the 1967 fifteenth edition of the *Directory for Agencies Serving Blind Persons in the United States*, fifty such schools exist. Of these schools (see Appendix i) thirty-nine are state schools, eleven are private institutions, and six provide, in addition, programs for deaf-blind children.

Since the beginnng of the twentieth century the belief has grown that the needs of blind students are the same as those of sighted students. Thus, when possible, blind youths are encouraged to remain with their families and attend regular public schools, with the special equipment, textbooks and necessary supplementary training being provided by the state and the school district. In fact the local school district is charged with the responsibility of educating *all* students in its area.[7]

Because of the movement to educate the blind with the sighted, the character of the residential school has changed greatly. According to Mr. McQuie, guidance counselor at the Missouri School for the Blind, sixty per cent of the blind in Missouri attend public schools and over one-half of the one hundred and ninety-five students at the Missouri School are now day students. Since there appears to be a tendency for more intellectually and emotionally capable students to attend public schools, students educated at a residential school are often those requiring more concentrated and specialized care, and/or individuals possessing multiple disabilities.

By 1950 the education of the blind with sighted was a reality in public education. There plans for such education are possible:

1. The Cooperative Plan — student attends regular classes and, in addition, a special class for the blind.
2. The Integrated Plan — student attends regular classes and, in addition, a full-time teacher of the blind is available.
3. The Itinerant Teacher Plan — student attends regular classes and a traveling specialist for the blind is employed for several schools.[8]

The type of plan used in a particular area depends upon the number of blind to be served and the amount of money available for the program.

From an opthalmological view an individual with less than 20/200 vision after correction or treatment is declared "blind." A person with 20/200 to 20/70 vision after correction or treatment is declared "partially seeing" and can benefit from sight saving instruction, which employs large print copies of materials and "non glare" learning situations.[9] According to Mr. McQuie, the St. Louis Public Schools in 1969 provided only two "sight saving" classes at the elementary level and none at the secondary level. At the same time in the St. Louis County Division of Special Education one "large print" class was maintained at the junior high and senior high levels.

No complete, authoritative information was available concerning the achievements of blind students in comparison with the sighted at the current time. Part of this problem results from the difficulties inherent in adapting standard achievement tests for use by blind students. Other difficulties arise from the absence of ability grouping in schools for the blind, and from the personality and guidance problems often evident in blind children or their parents.[10]

An adaptation of the Seashore Measures of Musical Talent in Braille for group use by the blind was developed by Hortense Forman, Director of Music at the Tennessee School for the Blind. According to Miss Forman, the adaptation proved quite successful, except for the section of the test involving tonal memory. Administered to selected students from grades seven to twelve, the results showed that the Braille format developed by Miss Forman was easy to use, the test could be used on either an individual or a group basis, and the scores were as reliable as among sighted students.[11]

Upgrading the standards of teacher preparation will probably also boost the achievement level of blind and multiple handicapped students. The Association for the Education of the Visually Handicapped, known as the American Association of Instructors of the Blind (AAIB), prior to the Summer of 1968, has a program of teacher certification adhered to by many private and state institutions.[12] At the Missouri School for the Blind a state teaching certificate is required. Specialized work in blind education may be taken in addition. Certificates for "Instructor of the Blind" and/or "Instructor of the Partially Sighted" are available.

Systems of Musical Notation for the Blind

While it is true that learning music by rote or by "ear" has some value, it also denotes a dependence upon another person's melodic phrasing, tempo, dynamics, in brief, his general interpretation of the music. Preparation for reading is of extreme importance for the blind musicians, for music reading is just as necessary for him as it is for one with sight. It is the only way to open the door to independence within the realm of music.[13]

The development of a workable, international system of notation that could be tactually comprehended was formulated over a period of many years. It was not until February, 1963, that the American Printing House for the Blind (APH), released the new *International Manual of Braille Music Notation*, the culmination of a movement for an International musical code begun in 1954.[14] However, there was an earlier, but unsuccessful movement to standardize the symbols of music notation which was centered in Paris in 1929.[15]

Braille music notation is not the only such system in existence today, but though it is often criticized, it is the most widely used system at present.

The first attempts at a reading system for the blind were raised reproductions of the symbols used by sighted persons. A French officer, Captain Charles Barbier, was the first person to use embossed dots instead of raised lines for the alphabet and other symbols. Though he developed a perforated state, the system was still awkward.[16]

Louis Braille (1809-1852) a brilliant student and organist in

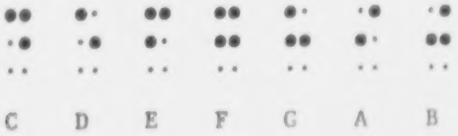
Paris, who had been blinded at three years of age, adapted the principle of embossed dots and developed it into an efficient system, still basically in use today. The six dot cell (⠿), the maximum number of dots the index finger can comfortably cover, is the basis of all three codes (mathematical, literary, and musical) in the Braille system. Embossing or raising certain dots in the cell transmits by touch a certain pattern to the blind. By raising different patterns of dots in each cell, sixty-three symbols are formed, which represent all twenty-six letters of the alphabet, all numerals, punctuations, and contractions. In addition these sixty-three patterns represent all facets of music notation, but in a symbolic, not a graphic manner as is found in regular staff notation."

The music symbols formed by a combination of dot patterns are thus horizontally written out. Therefore in order to "read" chords or scores which show combinations of instruments and/or voices, a knowledge of form and theory is an absolute prerequisite to music reading for the blind musician. This approach is very different from a sighted student's first encounter with music notation. The sighted student (if he ever learns it) usually becomes acquainted with phrase identification, motivic development, and analysis of form only *after* he has been "reading" music for some time.

Though a preliminary knowledge of literary Braille is preferred, the following material is presented as a brief introduction to Braille music notation. The piano keyboard, which encompasses the range of most instruments, is divided into seven octaves, plus a lower octave and an upper octave. Appendix ii shows this division. Thus there are nine octave markings, which are placed before each new line and before any note where a change of octaves occurs or a skip of a sixth or more is to be indicated within an octave. The following verse is helpful in learning how and when to mark octaves: "Never mark a second or third; Always mark a sixth or more; Fourth or fifth; Only if; It should leave the octave."'[8] In section B of Appendix ii, octave signs are given for the octaves most used in school music.

Each octave begins with C and ends at B. Following (Fig. 1) are the Braille symbols for the octave:

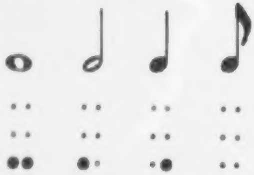
Fig. 1—



Here as in all the symbols the six dot cell ⠿ numbered 14 25 36 is the core of the entire notation system.

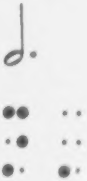
In the pitch symbols listed above, notice that only dots 1, 2, 4, and 5 were used. Time values are assigned to these by adding dots 3 and 6. Some of the most common are Fig. 2—

Fig. 2 --



Therefore the notes represented in Fig. 1 would all be eighth notes, since dots 3 and 6 are never used. If a note is to be dotted the third dot in a second cell is used. A dotted half note on "C" would be as in Fig. 3—

Fig. 3 --



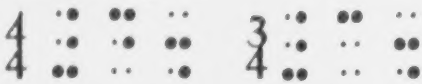
Bar lines are represented by a space. A heavy double bar is indicated by: ⠣⠅

and represents the conclusion of the piece or movement. The light double bar ⠣⠅⠄ is used to show the end of a musical section.

There are also various signs for different time signatures. A time signature is always preceded by the number sign: ⠼

Examples are found in Fig. 4—

Fig. 4 --



In Braille notation the time signature and key signature are given in the center of the line above the Braille transcription. No clef signs are used. (Appendix ii C).

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Rests are indicated: Fig. 5— Whole ⠍ ; Half ⠥ ; Quarter ⠧ ; Eighth ⠭ .

Three measures of rests would be shown as: ⠍⠍⠍

which literally translates as three whole rest signs. For four or more measures rest a number sign is also used. Thus for six measures of rests the sign would be: ⠼⠋⠍

Accidentals are represented as follows: Flat sign(♭): ⠣, Sharp sign (♯): ⠩, and the Natural sign (♮): ⠡

Other signs frequently used include:

1. The slur—⠉ If two notes are to be slurred, the slur sign is placed after the first note. If three or more notes are to be slurred, the slur sign is doubled after the first note and placed again before the last note slurred.

2. First ending—⠼⠂ Second ending—⠼⠆

3. The tie ⠈⠉ This symbol is placed between the notes tied.

4. The repeat sign—⠶ Numerous variations for repeat signs exist in Braille transcription. For example at the close of a first ending a "backward repeat sign" is used ⠣⠆

Appendix ii C provides a short example employing some of the patterns just discussed.

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Harmony can be represented in Braille in two ways:

1. Intervals—If "A" and "E" are to be sounded together, "A" is represented as one, "B" as two, "C" as three, "D" as four, and "E" as five. The Braille is then written as "A" with its fifth interval if it is in the lower range and/or meant to be played by the left hand. It would be read down as "E" with its fifth interval if it were in the upper range and/or meant to be played with the right hand. Appendix ii D shows the method for notating a four note chord played by both the right and left hand. One can notice the similarity between the Braille directions and the figured bass principle in ordinary notation.
2. The "Measure-In Accord" Sign— ⠣⠜ indicates that the notes preceding this sign are sounded together with the notes following the sign.

The previous discussion of Braille notation is a general, yet brief summation by the author of several articles and charts on the subject.[19]

That the Braille system is capable of symbolizing all elements of standard music notation is an established fact. However, except for a few instruments, (such as the violin, the cornet, and the tuba) it is not possible to read and play at the same time. Thus memorization is an absolute necessity. In using Braille notation the method is "to read, remember, and play."

Two outstanding individuals in the field of Braille music are Sister Mary Mark, Dean of the School of Music at Immaculate Heart College at Los Angeles, and Lenore McGuire, lecturer in education at the same institution. They have written two books which demonstrate their method for the young blind piano student entitled, *Read, Remember, and Play* and *Piano for the Blind Child*. Both books, obtainable from the Office of Faculty Publications at the College, stress extensive preparation for Braille music consisting of note learning, relaxation at the keyboard, knowledge of music notation and structure, and three years of literary Braille.[20] With logical and imaginative teaching, Sister Mary Mark feels Braille notation can be made attractive to the blind child.[21]

Mr. Donald Wiley also has developed a similar method for piano students which again stresses the necessity of adequate preparation for music reading.[22]

Because the Braille notation system can reproduce all musical symbols and directions, it has a large following. There is obviously a need for continued efforts in increasing and maintaining a quantity of Braille music. The part played by voluntary groups and individuals in transcribing music into Braille cannot be over estimated. Two volunteer honorary music groups, Mu Phi Epsilon and Sigma Alpha Iota have adopted Braille transcripton projects.[15] Another volunteer organization of transcribers of quite a different nature is the group of prisoners at the Jackson State Prison in Michigan. These prisoners, three of whom possess transcription certificates from the Library of Congress, transcribe over ten per cent of that state's music. A similar program is being initiated in Indiana at the present time.[16]

A national program for making Braille music available came into existence because of two identical Congressional bills: H.R. 12038 proposed by Representative Robert J. Corbett of Pennsylvania on June 6, 1962; and S.3408 proposed jointly by Senators Wayne Morse of Oregon, J. J. Hickeye of Wyoming, and Mike Mansfield of Montana. Signed into law by the President on October 10, 1962, the Library of Congress was authorized and funded to establish and maintain a library of specialized materials for the blind. All available Braille music scores were purchased from the APH in Kentucky, the Howe Press in Watertown, Mass., the Royal National Institute for the Blind in England, and the Scottish Braille Press in Edinburgh as well as from other presses in Europe and the Americas.[17]

In addition, a program to transcribe Braille music was begun by the Library's Division for the Blind and Physically Handicapped, which would certify both blind and sighted transcribers. A central card catalog, the Union Catalog of Braille Music Materials, and a free correspondence course in Braille were also established.[18]

Although the Braille system carries with it an aura of stability and tradition, not all musicians and instructors of the blind find it satisfactory. Estella Meyer Macbride speaks of the frustrations encountered in piano music involving complex chord patterns and interwoven threads of notes. She strongly favors the use of tapes and recordings in learning music, though she does admit to a dependence upon the interpretation and accuracy of the recording pianist.[19]

Another method of notation for the blind was developed by Eve Welbourne, which uses a raised number system (from one to seven), which represents the melody and is read with the left hand. A raised alphabet (letters "A" to "G") represents the chords, which are read with the right hand. Various kinds of dots and diagonal lines are used to represent additional music symbols.[28]

A piano method for partially seeing students was developed by Gilbert Stoesz and Robert Bowers, which seems to follow a clear, logical, yet enjoyable approach.[29] The authors recommended special music holders, large print solos, staff papers, editions, and printing companies. Appendix iii offers a partial listing of these items and organizations.

Instructional Materials: Created for or Adapted to Music Education for the Blind

The current revolution in education, which concentrates more and more on the adaptation of electronic mechanisms and computers to classroom use, offers exciting possibilities for change and improvement in the education of the blind. Though the Division for the Blind and Physically Handicapped in the Library of Congress was established as a national center for reference, storage, and dissemination of all educational and recreational materials for the blind, many advances in techniques, materials, and methods originate in regional or local centers. Only a few of the most noteworthy developments can be listed here.

One such center is The Instructional Materials Development Center at Michigan University, which was established with funds from Title I of the Elementary and Secondary Education Act. The purpose of the Center which serves Michigan, Ohio, and Indiana is to provide an opportunity to conduct experimental work in instructional materials which are necessary to give the visually impaired child the best possible aids to his education. The Center has produced special attractive large print books, and has transferred tapes and recordings to easy-to-use cartridges.[30]

A multi-sensory instructional package was developed by the Center to assist blind and/or partially sighted students in instrumental music. This method seeks to support Braille notation and ear methods of learning through an integrated use of tapes.[31] Regular staff notation shows both the vertical and horizontal aspects of the music. However, as Mr. Levine points out in several articles, Braille notation is a linear notation showing only one symbol at a time. This would be similar to a sighted person learning a solo spelled out note by note on a regular typewriter. Thus Braille notation must be memorized a few measures at a time, and the possibility of absorbing or even becoming aware of the overall context and scope of a composition is nonexistent. To solve this problem, which leads to frustration in learning a Braille work, the Center developed the "Recorded Aid for Braille Music." This study pack contains four items:

1. a tape of the music
2. a Braille transcription of the music
3. a large print ink copy of the music
4. a regular printed edition of the music.

The tapes play the selection in three different ways:

1. Reduced tempo of solo part played alone with metronome.
2. Solo played at regular tempo without accompaniment.
3. Solo played at regular tempo with accompaniment.

This allows the student to hear how his part fits into the entire musical context.[82]

A pilot study of this method was made at the University, which proved to be quite successful. Selections for the instructional packs were carefully chosen, and the instrumental tapes were made by specially selected graduate students. Advantages of the "Recorded Aid for Braille Music" are obvious. The regular printed edition included makes the program accessible to sighted teachers in the public schools. Independent study is greatly enhanced, for the tapes can be repeated at will and as often as necessary. Finally, depending upon the needs and capabilities of the students, either the note or rote aspect of the method of instruction can be emphasized.[83]

Plans call for two thousand copies, (eighty-five titles for band and orchestra) to be produced during 1969 with funds from the Division for the Blind and Physically Handicapped in the Library of Congress. However, there is a great need to develop similar materials for keyboard and vocal instruction as well. According to Mr. Levine, the eventual goal will be an extensive catalog of multisensory music materials that will be available to all blind musicians.[84]

The "Autobraille" is another development of the Instructional Materials Center at Michigan University. By using computers and other mechanical devices, instead of paper, it forms a new alternative to Braille books. The tactual communication of the text material is accomplished by the student from his table top device which is electronically activated by a nearby control unit. Thus by utilizing ordinary Braille techniques, the student can make use of a light-weight portable medium for Braille reading.[85]

The "Autobraille" method allows for easy storage (minimum space), and easy portability (in comparison to a bulky Braille book). It also avoids the deterioration evidenced on Braille paper surfaces. Finally, the contents of each cartridge can be economically transmitted from one place to another via telephone channels or electronic devices."

A brief description of "Autobraille" must concentrate on the two aspects or parts of this device.

1. Generating — Tonal Storage Tapes — The symbols of natural language are converted into the sixty-three Braille symbols. These symbols are in turn translated by computer into a tonal code similar to that used in the Bell System's "Touch Tone." These "master" tonal tapes are then duplicated and handled by inexpensive recording and display devices.
2. Converting Tonal Data into Tactile Display — This transfer requires three pieces of equipment:
    a. Seven inch reel of one-fourth inch audio tape containing the tonal data.
    b. Table "Display Device" with a line of thirty Braille cells, a "Next Line Please" button, and a "Back Up Please" button.
    c. Control Unit — which holds the reel and is similar in shape and size to a portable tape recorder.

This Control Unit activates certain cell patterns by raising the correct dots in each of the thirty cells on the Display Device. When the student reads the line on the Display Device, he presses the "Next Line Please" button and the Control Unit activates the next line of Braille symbols in the text.

Transmissions of the tonal data at the rate of one thousand words per minute through commercial telephone devices, and even higher rates on special wide band equipment for inter library transmission make the communication economical and timely. In addition the operation of the equipment by a student consists of merely inserting a tape cartridge into the Control Unit, switching on the Display Device and operating the forward and back-up buttons as needed." These and the advantages listed previously seem to indicate large scale utilization of this device in the future, though no evidence relating to the amount of current usage could be determined by the author at this time.

The Lighthouse School — A Music School for the Blind

Though as a group the blind show no special aptitude for music, it is an art in which they may participate fully, for the absence of sight often makes aural absorption more feasible and complete. The Lighthouse Music School in New York City is a special type of school serving students from the five boroughs of New York and outlying districts. Originated in 1905 by Winifred and Edith Holt, the school today is part of the twenty-nine services offered by the Lighthouse, a local voluntary agency supported by the public."

The present staff, composed of blind and sighted teachers, works with approximately two hundred students each week of the September to June academic year. The ages of the students range from pre-school years to the occasional octogenarian. A member of the National Guild of Community Schools since 1961, the Lighthouse School admits all who love music, are blind or have partial vision, and have a desire to study."

The school professes a three-fold purpose of music in the educaitonal program of the blind:

1. For a small group of people it serves as training for an eventual career.
2. For a somewhat larger group it offers therapeutic value, especially for those blinded later in life.
3. For the great majority it provides cultural enrichment.

Therefore, to fulfill the needs demanded by the diverse abilities of the students and to develop within each student a free, confident manner at the instrument, three types of certificates are awarded by the school:

1. The First Certificate—is awarded to a student who completes elementary work in his instrument and knows basic principles of theory, eurhythmics, and solfege.
2. The Second Certificate—is awarded to a pupil who successfully completes instrumental work at the intermediate level, music history and related principles of musicianship, and chromatic harmony.
3. The Third Certificate — is a diploma awarded for advanced work in an instrument, counterpoint, advanced harmony, music literature, and history."

The school has maintained a fine reputation under the direction of George G. Bennette, a blind concert pianist and graduate of Oberlin and Juilliard and his predecessor, Charles J. Beetz. Students from the school have secured scholarships to Juilliard, The Cape Cod Music Center, Ethan Allen Music Center, and the Manhattan School of Music. In addition, others have been enabled to work with outstanding teachers. The excellence of the school may be ascertained also from observing the membership of its advisory board, which is headed by Leonard Bernstein and includes William Schuman, Rise Stevens, Lauritz Melchoir, and Milton Cross among others."

The curriculum of the school includes:

1. Music Theory
   a. Classes in Dalcroze Methods (eurhythmics and solfege)
   b. Private lessons in advanced harmony
2. Performance Experience
   a. Assemblies — regular participation by capable students is required.
   b. Concerts — public concerts, faculty and student recitals.
   c. Ensembles — chamber groups of strings and winds, piano duos, jazz groups, and vocal groups, including "The Lighthouse Singers," a group first organized in 1944.
3. Instruments — piano, strings (violin, viola, cello, bass, guitar), accordion, percussion, winds (brass and woodwinds), and organ.
4. Jazz Improvisation
5. Music History and Appreciation
6. Opera Workshop
7. Braille Transcription — an eight month course for sighted persons.
8. Staff Notation — It is readily admitted by those connected with the school that the system of Braille notation has been important to the institution's success. However a knowledge of staff notation is considered important in the education of the blind student, for it enables him to comprehend this terminology when encountered in music texts and to work adequately with and teach sighted students. The "Notation Graph," invented by the former director of the school, Charles Beetz, aids the blind student in this facet of his education. The graph consists of a cork surface and heavy wire notation symbols which are attached to the cork to form any desired example of staff notation."

The school publishes a quarterly magazine, *Overtones*, designed for both professional musicians and lay people. In addition to a library of vocal and instrumental Braille music and a record library, the institution has cultivated and nurtured a library of hand-copied, large-print music for the last twenty-five years. The collection of instruments at the school includes twenty pianos (seven are Steinway grands), string and wind instruments, an electronic organ, a one manual harpsichord, and a two manual pipe organ built for the school in 1966."

The facilities, equipment, staff, and supporters of the Lighthouse Music School have, since its opening in the early part of the twentieth century, exhibited a spark of light, a bright example in the area of music education for the blind. At this time, after several inquiries and much searching, the author has been unable to find another institution of this type and quality.

Some National Centers That Communicate Information Concerning Music Education and the Blind

Several national centers concerned with music materials and information pertaining to the blind offer service to the layman, the educator, and the instruction specialist for the blind.

The Division for the Blind and Physically Handicapped in the Library of Congress became in 1962 the central source of music material for the blind by an act of Congress. By 1967 the Division claimed twelve thousand volumes of Braille music, Braille books about music and musicians, talking books, and magnetic tapes. All of these items are circulated free of charge to any blind person in the United States or its possessions. Included in this paper is a bibliography (see Appendix iv) compiled by Mrs. Mary Mylecraine, Reference Librarian of the Division. Some additions, corrections, explanatory comments and deletions were made in the basic list by the author where applicable to the structure and purpose of this paper.

In addition to the program mentioned earlier which trains and certifies Braille transcribers, the Division is working to fill the gap in Braille music materials now available for the young child and the college student.

Though listed in Appendix iv A, three centers deserve special mention here because of their tradition of service and/or work at the present time. The American Printing House for the Blind (APH) conducts a program of research in materials and equipment for the blind. The American Foundation for the Blind has worked for many years to support all phases of training and work for the blind. Finally, the American Association of Instructors for the Blind (AA IB), now known as the Association for the Education of the Visually Handicapped, besides establishing a program for teacher certification, has worked with the Division in publishing and providing Braille materials.

Conclusion

Now came the herald along, leading the most revered singer,

The muse's beloved to whom both evil and good had been granted;

For she took the sight from his eyes

But gave him the gift of sweet music.

Odyssey Book VIII
38-40

As these lines from Homer and the following statements indicate, the blind and the art of music have been linked often together throughout history. Many distingushed composers and performers were blind. Among them were Ossian, the Celtic bard, Francesco Landino, Hermando de Cabezon, Bach in his last years, Louis Braille and fifty other Parisian organists of his time, Delius, Jean Langlais, and George Shearing.

The study of music education for the blind therefore seems a worthy endeavor, since it is today's educational system which must bear the responsibility for the training and preparation of the gifted blind musician of tomorrow.

This paper has attempted to present basic information and developments in the field of music education for the blind. No broad generalization or concrete conclusions can be drawn at this time, for information concerning national standards and programs of music education in the various schools for the blind does not exist in any useable form. Therefore, because of the apparent void concerning the activities of all institutions for the blind, it would have been unwise, unfair, and impracticable to present a critique and analysis of an individual school as originally intended by the author. Instead a report of current trends, techniques, and general information concerning this field was attempted, a report necessarily based upon and limited by the data available at present.

Much further study, survey, and investigation of all schools with music programs for the blind is necessary before any worthwhile evaluation of systems can be attempted.

It is hoped that this paper will serve as a starting point to further in-depth work in the field of music education for the blind.

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APPENDIX i

State Residential Schools for the Blind

- Alabama Institute for Deaf & Blind
South Street
P. O. Box 268
Talladega, Alabama 35160

Arizona State School for the Deaf & Blind
1200 West Speedway
P. O. Box 5545
Tucson, Arizona 85703

Arkansas School for the Blind
2600 West Markham
Little Rock, Arkansas 72203

#*California School for the Blind
3001 Derby Street
Berkeley, California 94705

Colorado School for the Deaf & Blind
Colorado Springs, Colorado 80903

- Connecticut Institute for the Blind
Oak Hill School
120 Holcomb Street
Hartford, Connecticut 06112

Florida School for the Deaf & Blind
St. Augustine, Florida 32084

Georgia Academy for the Blind
Macon, Georgia 31200

Hawaii
Diamond Head School
3440 Leahi Avenue
Honolulu, Hawaii 96815

Idaho School for the Deaf & Blind
14th and Main Streets
Gooding, Idaho 83706

- Hope School
Hazel Lane, R.R. 3
Springfield, Illinois 62707

#*Illinois Braille & Sight Saving School
658 East State Street
Jacksonville, Illinois 62650

Indiana School for the Blind
7725 College Avenue
Indianapolis, Indiana 46240

Iowa Braille & Sight Saving School
1002 G. Avenue
Vinton, Iowa 52349

# Kansas School for the Blind
1100 State Avenue
Kansas City, Kansas 66102

# Kentucky School for the Blind
1867 Frankfort Avenue
Louisville, Kentucky 40206

Louisiana State School for the Blind
1120 Government Street
Baton Rouge, Louisiana 70802

Louisiana State School for Negro Blind
Southern University Branch
P. O. Box 10174
Baton Rouge, Louisiana 70813

- The Maryland School for the Blind
3501 Taylor Avenue
Baltimore, Maryland 21236

*Massachusetts
Perkins School for the Blind
175 N. Beacon Street
Watertown, Massachusetts 02172

#*Michigan School for the Blind
715 W. Willow
Lansing, Michigan 48906

Minnesota Braille & Sight Saving School
Faribault, Minnesota 55021

Mississippi School for the Blind
1252 Eastover Drive
Jackson, Mississippi 39201

Missouri School for the Blind
3815 Magnolia Avenue
St. Louis, Missouri 63110

#*Montana School for the Deaf & Blind
3800 Second Avenue North
Great Falls, Montana 59401

Nebraska School for the Visually Handicapped
824 - 10th Street
Nebraska City, Nebraska 68410

- New Jersey
St. Joseph's School for the Blind
253 Baldwin Avenue
Jersey City, New Jersey 07306

New Mexico School for the Visually Handicapped
P. O. Box 457
Alamogordo, New Mexico 88310

- New York
Lavelle School for the Blind
221st Street and Paulding Avenue
New York, New York 10469

-*New York Institute for the Education of the Blind
999 Pelham Parkway
New York, New York 10469

New York State School for the Blind
Batavia, New York 14020

AVAILABLE

• North Carolina
The Governor Morehead School
Raleigh, North Carolina 27606

• North Dakota School for the Blind
500 Stanford Road
Grand Forks, North Dakota 58201

• Ohio State School for the Blind
5220 N. High Street
Columbus, Ohio 43214

• Oklahoma School for the Blind
3300 Gibson Street
Muskogee, Oklahoma 74401

• Oregon State School for the Blind
700 Church Street, S.E.
Salem, Oregon 97310

- Pennsylvania
Overbrook School for the Blind
64th Street and Malvern Avenue
Philadelphia, Pennsylvania 19151

- Pennsylvania
Royer-Greaves School for the Blind
Soth Valley Road
Paoli, Pennsylvania 19301

- Western Pennsylvania School for Blind Children
Bayard at Bellefield Avenue
Pittsburgh, Pennsylvania 15213

• Puerto Rico
Institute for Blind Children
Fernandez Junco Avenue
Stop 19, Santurce
Puerto Rico 00915

• South Carolina School for the Deaf & Blind
Spartanburg, South Carolina 29301

• South Dakota School for the Blind
Aberdeen, South Dakota 57401

• Tennessee School for the Blind
Donelson, Tennessee 37214

• Texas School for the Blind
1100 West 45th Street
Austin, Texas 78756

• Utah Schools for the Deaf & the Blind
846-20 Street
Ogden, Utah 84401

• Virginia School for the Deaf & the Blind
Staunton, Virginia 24401

• Virginia School at Hampton
Hampton, Virginia 23368

•*Washington State School for the Blind
2214 E. 13th Street
Vancouver, Washington 98663

• West Virginia Schools for the Deaf & Blind
Romney, West Virginia 26757

• Wisconsin School for the Visually Handicapped
1900 W. State Street
Janesville, Wisconsin 53545

KEY: • State Schools
- Private Schools
* Has also a program for deaf-blind

KEY: • State Schools
- Private Schools
* Has also a program for deaf-blind

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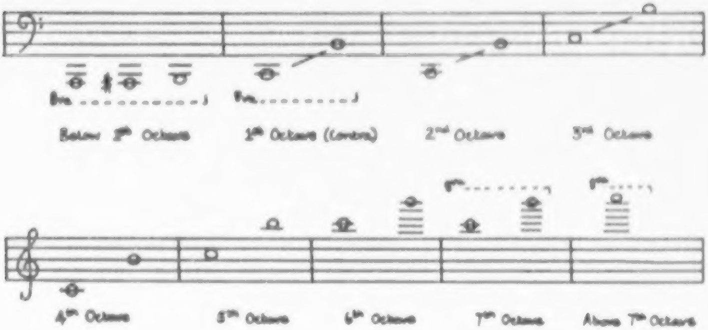
APPENDIX ii

A OCTAVES

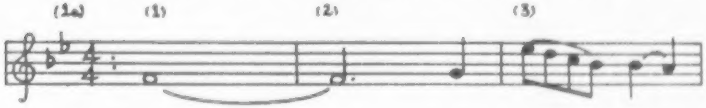

8va
8va
Below 1st Octave
1st Octave (Contra)
2nd Octave
3rd Octave
8va
8va
4th Octave
5th Octave
6th Octave
7th Octave
Above 7th Octave

B OCTAVE SIGNS (Most frequently used in school music)

⠈	⠘	⠸	⠐	⠨	⠰	⠠
1st	2nd	3rd	4th	5th	6th	7th

C MUSIC EXAMPLE: (A single instrumental part of a portion of a composition for band)

Measures are numbered above the regular notation and above the Braille notation. The time and key signatures are designated (1a).

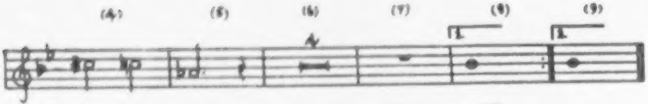


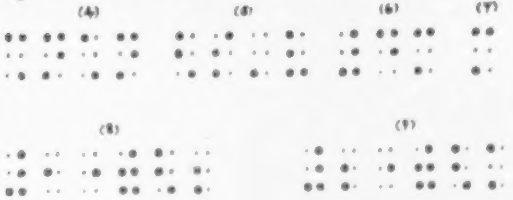
(1a)

⠣⠣⠼⠙⠲

(1) ⠐⠿⠈⠉ (2) ⠟⠄⠳ (3) ⠅⠋⠉⠉⠋⠑⠙⠺⠉⠪

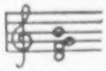
APPENDIX ii - Continued





D - HARMONY

Only the first note of the chord is written. Other notes are represented from the lowest to the highest (left hand) or the highest to the lowest (right hand) by signs indicating the interval formed with the one note that is represented.



Read for the right hand (down) this is fourth octave "D", whole note, interval of a third, interval of a fourth, interval of a sixth.

Read for the left hand (up) this is fourth octave "D" whole note, interval of a third, interval of a fourth, interval of a sixth.

Note the similarity to the figured bass symbols for this chord: $^{4}_{3}$.

It also shows to the blind student that this chord is the second inversion of the V7 in "C" Major. It's the V7 in the Key of "C."

APPENDIX iii

A COMPANIES THAT PUBLISH LARGE PRINT EDITIONS

1 Boston Music Co
116 Boylston Street
Boston, Massachusetts

2 Charles H. Hansen Publishing Co
119 West 57th Street
New York, New York

3 Mills Music Co
1619 Broadway
New York, New York

4 B F Wood Co
1619 Broadway
New York, New York

5 Materials in 12 point type - Library of Congress, Division for the Blind and Physically Handicapped - Circular 64-3

B EXAMPLES OF ELEMENTARY PIANO SOLOS IN CLEAR PRINT EDITIONS

1 Erb, M "Little Miss Bluebird," Boston Music Co

2 Wrag, James I "Trill Waltz," Willis Music Co , Cincinnati, Ohio

3 Obenchain, I "My New Red Scooter," G Schirmer Inc , New York, New York

C ADJUSTABLE MUSIC RACK FOR UPRIGHT PIANOS

American Printing House for the Blind - Catalog No 1-0344

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APPENDIX iv

A - SOURCES OF MATERIAL RELATING TO MUSIC FOR THE BLIND

AFB: American Foundation for the Blind, 15 West 16th Street, New York, New York 10011 (Information and appliances.)

APH: American Printing House for the Blind, 1839 Frankfort Avenue, Louisville, Kentucky 40206 (Periodicals, scores, texts, and appliances available for purchase.)

BIA: Braille Institute of America, 741 North Vermont Avenue, Los Angeles, California 90029 (Scores.)

CNIB: Canadian National Institute for the Blind, 1929 Bayview Avenue, Toronto 16, Ontario (Library and transcription services for Canadian citizens.)

Division for the Blind and Physically Handicapped, Library of Congress, 1291 Taylor Street, Northwest, Washington, D.C. 20542 (Periodicals, scores, texts on loan, informational material on transcribing, teaching, list of volunteers, Union Catalog of Music Materials, etc.)

Judy Company, 310 North 2nd Street, Minneapolis, Minnesota 55401 (Music flannel board kits.)

List "F" - Special Resources for Reading and Educational Materials, Directory of Agencies Serving Blind Persons in the United States Fifteenth Edition, American Foundation for the Blind, Inc., New York, 1967, revised March, 1969, pp. 221-227.

Louis Braille Foundation for Blind Musicians, Inc., 112 E. 19th Street, New York, New York 10016 (Occupational counseling, Music transcription service.)

National Society for the Prevention of Blindness, Inc., 16 E. 40th Street, New York, New York 10016 (Information of blindness.)

New York Association for the Blind, Lighthouse School of Music, 111 E. 59th Street, New York, New York 10022. (Curriculum especially adapted to the needs of blind students.)

Perkins School for the Blind, 175 North Beacon Street, Watertown, Mass. 02172: Howe Press (Scores, texts, and appliances available for purchase.) Library (Scores and texts on loan, reference material.)

Recording for the Blind, Inc., 215 East 58th Street, New York, New York 10022 (Music texts read on tape - available on loan.)

RNIB: Royal National Institute for the Blind, 224-6-8 Great Portland Street, London W.1, England (Scores, texts, periodicals and appliances available for purchase.)

Directory of Agencies for the Blind in the British Isles and Overseas - Contact the Library of Congress.

B - CATALOGS OF BRAILLE MUSIC

Catalog of Music Publications, Revised. APH 1963.

Supplement of Music Selections Formerly Available from the Illinois Braille and Sight Saving School. APH 1966.

Catalog of Braille Music. Howe Press of Perkins School for the Blind. 1966.

Braille Music Catalog. RNIB 1965.

C - BOOKS ON BRAILLE MUSIC

Ashcroft and Henderson. Appendix E. Programmed Instruction in Braille. Stanwix House, Inc., 1963.

Braille Notation. Grove's Dictionary of Music and Musicians. pp. 903-906. St. Martin's Press, Inc., New York, 1954.

AILABLE

Jenkins, E. W. **Braille Music Chart**, New Revised Edition. (Available in both print and Braille) APH 1960

Nemeth, A., **A Dictionary of Braille Music Symbols**, APH 1953

Spanner, H. V. **Lessons in Braille Music**, American Edition. (Available in both print and Braille) APH 1961

Spanner, H. V. **Revised International Manual of Braille Music Notation**, American Edition. (Available in print and Braille) APH 1961

D - ARTICLES FROM PERIODICALS

"Braille Helps Them Memorize Music," **Music News**, April, 1950

"Burgeoning Braille Project, The," **Pan Pipes**, Vol. 57, 1964

"Division for the Blind, Library of Congress," **Pan Pipes**, Vol. 59, 1966

"Darling, L. C., "Music for the Blind," **Boston Sunday Herald Magazine**, October 10, 1965

Follmer, G. M. "Music Through Touch: Braille Scores for the Blind," **Music Journal**, April, 1951

Gallozzi, C., "A Music Library for the Blind," **Music Journal**, October, 1957

Mylecraine, M., "Music Selections for the Blind to be Made from NFMC Junior Festivals Bulletin," **Music Clubs Magazine**, February, 1967

———— "SAI's Braille Music Transcription Project Moves Forward," **Pan Pipes**, Vol. 56, 1963

Sansone, R., "Braille Music Projects Profile, 1959-1966," **Pan Pipes**, Vol. 59, 1963

Stoddard, H., "How the Blind Read Music," **International Musician**, March, 1952

————, "Transcription of Music Braille by a Group of Women in Los Angeles," **Christian Science Monitor**, May 28, 1966

U. S. Congress, Senate Committee of Rules and Administration. **Establishing in the Library of Congress a Library of Music Scores for the Use of the Blind**. Report to Accompany S. 3408, **Washington**, U. S. Government Printing Office, 1962

Wintle, M. J., "Answer to the Blind Musician's Plight," **The New Outlook for the Blind**, April, 1964

E - CORRESPONDENCE COURSES

Music Appreciation (Braille and disc). The Hadley School for the Blind, Inc.

How to Read Braille Music Notation (Braille, audio tape, and discs). The Hadley School for the Blind, Inc., 700 Elm Street, Winnetka, Illinois 60093

F - MUSIC PERIODICALS IN BRAILLE AND ON TAPES

Tapes are circulated by Regional Tape Lending Libraries

Braille Musical Magazine, published by RNIB, London

Braille Musician, The, published in Braille by the Division for the Blind and Physically Handicapped, Library of Congress (sent free of charge to the home)

Braille Piano Technician, published by Piano Technicians of Illinois

High Fidelity - on tape

Keyboard Junior, published in Braille by APH

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Overtones, published by the New York Lighthouse School of Music

The Musical Quarterly - on tape

Young Keyboard Junior, published in Braille by APH

G - MUSIC ARTICLES IN CONNECTION WITH BLIND YOUTH

[illegible], N., "An Experiment in Group Use of the Seashore Measures of Musical Talents," **International Journal for the Education of the Blind**, Vol. 3, 1958

Grupp, J. W., "Music and the Blind," **Instrumentalist**, April, 1964

Hayes, J. W., "Teaching Popular Music in Schools for the Blind," **International Journal for the Education of the Blind**, June, 1952

Jakobson, A., "Teaching Music to the Blind," **Triangle**, Vol. 51, No. 3

Mary Mark, Sister, "Importance of Music Reading for the Blind Child," **National Catholic Educational Association Bulletin**, August, 1962

Mary Mark, Sister, and McGuire, L., "Blind Children Can Read Music," **Music Journal**, October, 1960

McGuire, L., "Music for the Blind Child," **National Catholic Educational Association Bulletin**, August, 1962

Pilcher, M., "Resources for Teaching Music to the Blind," **Music Educators Journal**, November-December, 1964

Pitman, D. J., "The Musical Ability of Blind Children," **American Foundation for the Blind Research Bulletin**, October, 1965

Sabin, R., "The Lighthouse School: Music for Blind Students," **Musical America**, May, 1952

Stoesz, G., "A Suggested Guide to Piano Literature for the Partially Seeing," National Society for the Prevention of Blindness, Inc., 1966 pamphlet

Stoesz, G. and Bowers, R. A., "Early Piano Instruction for Partially Seeing Children," **Sight Saving Review**, Spring, 1965

Thompson, R. P., "Music Program Visually Handicapped Children," **The New Outlook for the Blind**, February, 1957

Townsend, P. E., "The Value of Music for the Blind Child," **Educator**, August, 1964

Zemtzova, M. I., "Sculpture and Music as Important Means of Aesthetic Education for the Blind in the USSR," **American Foundation for the Blind Research Bulletin**, December, 1962

H - MUSIC FOR THE ADULT BLIND

Issacs, E., **Handbook for Blind Teachers of Music**, Maclellan, Glasgow, 1945, (RNIB) - book

————, "Bach by Blind Singers," **Music and Musicians**, May, 1961

Bede, Bem, "Singer of Yore and Blind Co-developer of Braille Music Method," **Variety**, February 11, 1959

Beetz, C. J., "Music for the Blind," **National Association for Music Therapy Bulletin**, May, 1953

Bibliography on Music Therapy, National Association for Music Therapy

————, "Blind Musicians' Boon," **Musical America**, April, 1950

————, "Braille Arrangements for Blind Organists," **Variety**, December 21, 1949

————, "The Braille," **Violins**, January/February, 1954

__________, "Careers in Music for the Blind." **International Musician**, March, 1961 and March, 1964

Dodge, H., "Music Therapy – A New Professional Frontier for the Visually Handicapped," **National Association for Music Therapy Bulletin**, March 4, 1958

Dunn, P., "The Mississippi: The Story of a Blind Musician," **London Sunday Times Magazine**, June 26, 1966

Frost, H., "Cheers for Shearing," **Down Beat**, October 19, 1967

Gorson, A. G., "Bringing Music to the Blind," **Music Journal**, November/December, 1950

Haines, N., "Music in the Dark," **Pan Pipes**, March, 1952

__________, "Handicapped Musician of 1966," (Art Edgerton), **Music Journal**, April, 1967

Hardy, R. E., "Music as a Professional Occupation for the Blind," **The New Outlook for the Blind**, May 1966

Henderson, A., "Unseen Notes and Keys," **Music Journal**, October, 1952

Higginson, J. V., "That the Blind May Sing," **Catholic Choirmaster**, Winter, 1952

Hoare, R., "New Apparatus for a New Occasion," (Metal blackboards and symbols for a blind teacher), **Music Teacher**, January, 1963

Jones, C. R., "Music at His Fingertips," (Braille labeled phonograph records), **Music Clubs Magazine**, November, 1954

Kirk, R., "Telling It Like It Is," **Down Beat**, June 15, 1967

__________, "Last Remnants of a Mendicant Musician's Guild," **International Folk Council Journal**, Vol. 11, 1959

__________, "Lion-Hearted Musician," **Boston Symphony Concert Bulletin**, February 22, and April 4, 1952

__________, "Louis Braille – Educator and Musician," **Symphony**, December, 1952

__________, "Music as Therapy," (The Central Theme of each November issue of **Music Journal**.)

__________, "Music for the Blind," **Metronome**, April, 1955

__________, "Music for the Blind Month," **Music Clubs Magazine**, January, 1954

__________, "Music for the Blind Opens," **Musical Courier**, November 15, 1953

__________, "Music Writer Aids the Blind Musician," **Music News**, December, 1949

__________, "Organ and Church Music Notes," **Musical Opinion**, November, 1952

Paul, D. R., "Out of the Dark," **Music Journal**, October, 1951

__________, "Remington and Braille Institute Introduce Revolutionary Record," **Musical Courier**, November 1, 1954

__________, "Roland Kirk: One Man Band," **Ebony**, May, 1966

__________, "Roosevelt University Hold Second Blind Tuners' Course," **Piano Review**, July, 1956

Spaeth, S., "In and Out of Tune," **Music Journal**, November, 1963

Spaeth, S., "Music for the Blind," **Musical Courier**, August, 1954

Thompson, T., "Music Soaring in the Darkened World," **Life**, July 29, 1966

__________, "Training the Blind to Tune and Repair Pianos Found Best in Small Groups," (Piano hospital in Vancouver, Washington), **Music Trade Review**, 1951

BEST COP

————————, "Unique Console for the Blind," (Austin installed at New York Institute for the Education of the Blind), American Organ, February, 1956.

Unkefer, R. F., "Progress Report of Musical Therapy Study, Kansas Rehabilitation Center for the Adult Blind," Music Therapy Bulletin, No. 6, 1956.

Wells, P. E., "Eve Welbourne: A Heroine for the Handicapped." Music Journal, November, 1967.

Footnotes

1 Robert Sabin, "The Lighthouse School: Music for Blind Students," Musical America, May, 1952, p. 25.

2 Ibid., p. 25.

3 Ralph Vickers Merry, Problems in the Education of the Visually Handicapped, p. 36.

4 Op. cit., Sabin, p. 25. Ralph Merry (p. 36) dates the opening of the school in 1784, while Robert Sabin (p. 25) states it opened in 1785. Arthur Hutchings in A Companion to Mozart's Piano Concertos, Oxford University Press, 1948 (p. 116) states that Mozart may have dedicated his Piano Concerto in B Flat Major, K456 to this blind virtuoso, Maria Theresa von Paradis.

5 Op. cit., Merry, p. 36.

6 Ibid., p. 36.

7 The Pine Brook Report, National Work Session on the Education of the Blind with the Sighted, p. 19.

8 Ibid., pp. 7-19.

9 Op. cit., Merry, p. 15.

10 Op. cit., Merry, pp. 151-181.

11 Hortense Forman, "An Experiment in Group Use of the Seashore Measures of Musical Talents," The International Journal for the Education for the Blind, Vol. III No. 2 (1958), 41-45.

12 ———————— Conference with Mr. McQuie, Missouri School for the Blind, May, 1969.

13 Sylvia Beryk, "Resources for Blind Students and Their Teachers," Music Educators Journal, December, 1965, 75-77.

14 Maxine Pilcher, "Resources for Teaching Music to the Blind," Music Educators Journal, Nov.-Dec. 1964, 67-68.

15 Op. cit., Sabin, p. 33.

16 Ibid., p. 33.

17 Op. cit., Beryk, pp. 75-76, Sabin, p. 34, Braille Chart from the Band Department, Missouri School for the Blind.

18 Mary Turner De Garmo, Introduction to Braille Music Transcription, p. 33.

19 Mary Mylecraine, "Music Selections for Blind to be Made from NFRC Junior Festivals Bulletin," Music Clubs Magazine, February, 1967.

20 Op. cit., Pilcher, pp. 67-68.

21 Sister Mary Mark, I.H.M., "The Importance of Music Reading for the Blind Student," National Catholic Educational Association Bulletin Vol. XIX, August 1962, pp. 486-487.

22 Don Wiley, "Teaching Music to the Blind," Clavier, November, 1968, pp. 1-2.

Y AVAILABLE

23 Op. cit., Mylecraine, p. 1. These agencies are now under the sponsorship, guidance, and instruction of the Division for the Blind and Physically Handicapped at the Library of Congress.

24 Lou Alonso and Sue Ludwig, "A Review of Tri-State Resources for Reproducing Materials for Visually Handicapped School Children," Dissemination Document No. 6, USOE/MSU Regional Instructional Materials Center for Handicapped Children and Youth.

25 Op. cit., Beryk, pp. 76-77.

26 Ibid., p. 77.

27 Estella Meyer Macbride, "Ear Method for Blind Pianists," Music Journal, XXVI, No. 9 (1968), 29.

28 Pauline E. Wells, "Eve Welbourne: A Heroine for the Handicapped," Music Journal, XXV, No. 9 (1967), 28.

29 Gilbert Stoesz and Robert Bowers, "Early Piano Instruction for Partially Seeing Children," The Sight Saving Review, XXXV, No. 1 (Spring, 1965), 24-27.

30 Dr. Ira Polley, "The Instructional Materials Development Center," published by the State Board of Education in Lansing, Michigan, 1968.

31 Joseph Levine, "Multi-Sensory Materials Aid Visually Handicapped," Music Journal, XXVI (November, 1968), 32.

32 Joseph Levine, "A Recorded Aid for Braille Music," The Prospectus Series #3, Michigan State University, February, 1967.

33 Op. cit., Levine, Music Journal, p. 32.

34 Ibid., p. 32.

35 Ted Ward, "Automated Braille (Autobraille)," Dissemination Document No. 3 (Papers of the Institute No. 42), Michigan State University.

36 Ibid.

37 Ibid.

38 ————. "The Lighthouse Music School Catalog 1968-1969," The New York Association for the Blind, 1968 with revised staff listings of January, 1969, p. 5.

39 Op. cit., Sabin, p. 25.

40 Op. cit., Lighthouse Catalog, p. 13.

41 Ibid., inserted sheet and p. 22.

42 Ibid., p. 14.

43 Ibid., p. 17.

44 Op. cit., Mylecraine, pp. 1-2.

45 Op. cit., Lighthouse Catalog, p. 3.

BEST COPY AVAILABLE

Bibliography

ARTICLES

Beryk, Sophia V. "Resources for Blind Students and Their Teachers." Music Educators Journal, November-December, 1965, 75-77.

Forman, Hortense. "An Experiment in Groups Use of the Seashore Measures of Musical Talents." The International Journal for the Education of the Blind, III, No. 2 (1858), 41-45.

Grupp, James W. "Music and the Blind." The Instrumentalist, XVIII, No. 9, Evanston, Illinois, The Instrumentalist Co., (April, 1964), 50-51.

Henderson, Arthur. "Unseen Notes and Keys." Music Journal, X, No. 7 (October, 1952).

Levine, Joseph. "Sensory Materials Aid Visually Handicapped." Music Journal, XXVI (November, 1968).

Levine, Joseph. "The Recorded Aid for Braille Music." Journal of Music Therapy, V, No. 1 (March, 1968).

Macbride, Estella Meyer. "Ear Method for Blind Pianists." Missouri Journal, XXVI, No. 9 (November, 1968), 29.

McQuire, Lenore. "Music for the Blind Child." National Catholic Educational Association Bulletin, XIX, No. 1, Detroit, Michigan, (August, 1962), 488-490.

Pilscher, Maxine. "Resources for Teaching Music to the Blind." Music Educators Journal, November-December, 1964, 67-68.

Sister Mary Mark I.H.M. "The Importance of Music Reading for the Blind Students." National Catholic Educational Association Bulletin, XIX, No. 1 (August, 1962), 486-487.

Stoess, Gilbert and Robert Bowers. "Early Piano Instruction for Partially Seeing Children." The Sight-Saving Review, XXX, No. 1, New York National Society for the Prevention of Blindness, Inc., (Spring 1965), 24-27.

Wells, Pauline E., "Eve Welbourne: A Heroine for the Handicapped." Music Journal, XXV, No. 9 (November, 1967), 28.

Wiley, Don. "Teaching Music to the Blind." Clavier, November, 1960.

BOOKS

Cutsforth, Dr. Thomas D. The Blind in School and Society, A Psychological Study. New York: American Foundation for the Blind, 1951.

DeGarmo, Mary Turner. Introduction to Braille Music Transcription, Edited and Adapted for the Library of Congress Division for the Blind and Physically Hanidcapped. Louisville, Kentucky: American Printing House for the Blind, 1970.

Merry, Ralph Vickers. Problems in the Education of Visually Handicapped Children. Cambridge: Harvard University Press, 1933.

PAMPHLETS

Alonso, Lou and Sue Ludwig. "A Review of Tri-State Resources for Reproducing Materials for Visually Handicapped School Children." Dissemination Document No. 6. USOE/MSU Regional Instructional Materials Center for Handicapped Children and Youth, Michigan State University, East Lansing, Michigan.

Levine, Joseph. "A Recorded Aid for Braille Music." The Prospectus Series, Paper No. 3. USOE/MSU Regional Instructional Materials Center for Handicapped Children and Youth, Michigan State University College of Education, February, 1967.

Levine, Joseph. "Educational Uses of Cartridge Tapes." Dissemination Document No. 11, USOE/MSU Regional Instructional Materials Center for Handicapped Children and Youth, Michigan State University, East Lansing, Michigan.

Polley, Dr. Ira, Chairman. "The Instructional Materials Development Center." State Board of Education, Lansing, Michigan, 1968.

Ward, Ted. "Automated Braille System (Autobraille)." Dissemination Document No. 3, Michigan State University Cooperating with the State Department of Education. USOE/MSU Regional Instructional Materials Center for Handicapped Children and Youth, Michigan State University, East Lansing, Michigan, November, 1966.

__________ "The Lighthouse Music School 1968-1969." New York: New York Association for the Blind, 1968, with revised staff lists for January 1969.

__________ "The Pine Brook Report. National Work Session of the Education of the Blind with the Sighted." New York: American Foundation for the Blind, 1954.

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IMPROVED TEACHING THROUGH THE USE OF THE VIDEOTAPERECORDER

Paul D. Rodabaugh
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The videotaperecorder has made a great and lasting impact in the field of education. "Despite great variation in complexity and special features, all of the devices that are currently called 'teaching machines' represent some form of variation on what can be called the tutorial or Socratic method of teaching" (Lumsdaine, 1960, p.5).

The following are essential features common to all forms of programmed instructions:

1. The learner is required to interact in some manner with the program.
2. The learner receives immediate feedback informing him of the corectness or incorrectness of his response.

During the fifties and sixties, B. F. Skinner was the most prominent figure in the use of advanced teaching devices. Skinner introduced via the field of teaching machines and programmed instruction his discoveries concerning operant behavior. He saw his machine not as a testing device, but as a device for teaching.

Programming, which includes the use of the videotaperecorder, is based on a conditioning model of learning. The desired change in behavior (learning) is brought about by inducing the learner to make the correct response and then reinforcing this response. Correct responses are the only responses which are encouraged and then reinforced. However, incorrect responses are noticed so that adjustments can be made in the program to ilicit the correct responses. The learner is reinforced by using correct responses on the videotaperecorder and by the mediating circumstances (instructor).

Progess In Teaching Aids

"The conductor must work for daily improvement, daily enlarging of experience. His way is a long one, and he must live in the fervent intention to be, at seventy, a much better conductor than he was at only sixty-nine!"

—Bruno Walter

This statement should be just as true of the educator who has the advanced technical tools of today to reinforce various methodologies of instruction. Every effort must be made to guide each student to a fuller, richer life through knowledge; and it is especially true of the music educator who has the opportunity to lead a student through profound aesthetic experience to meaningful self-actualization.

The music department of every school system should be concerned with improving instruction through a program which relates to the individual student. Though the administration and music supervisors officially set department policy, it is the music teacher who has the responsibility of making music come alive for every child. Everything a teacher does professionally must be underlined with the personal goal of self-evaluation and self-improvement. Not only should the music director evaluate his program, but his students should evaluate the music program in relation to themselves.

Teachers often tend to isolate themselves in their own stereotyped routines observing nothing. One of the greatest assets of conventions, festivals, and contests, is the pooling of experience and knowledge when the directors get together for discussions. By this same token, music educators should remain active in professional organizations, where, not only clinics, discussions and lectures are held for the enrichment of the teachers, but the amount of material in magazines and brochures cannot be measured in helpfulness to the individual teacher.[1]

The music teacher who takes advantage of all these facilities may still find they do not adequately fulfill the needs of the student. It is surprising how many facets of music which the director has tried to give the students and has not been successful, may be more understandable if approached from an entirely new perspective.

Since World War II the advance of electronics has put within the reach of all school systems some advanced tools, and to the affluent school systems a multitude of devices to help the teacher, and even more important, the student. Two of the least expensive and yet a must in any program, are the tape recorder and the phonograph. It is unimaginable to think of teaching music without being able to hear the great music organizations playing the finest music.[2] Also, all music programs, and especially those which include performing groups, receive many benefits from slide, movie, and overhead projectors. However, the benefit of hearing oneself is an immeasurable aid.

In the last fifteen years we have seen the advent of the videotaperecorder and computorized learning. The videotaperecorder, or VTR, has established a brief but meaningful one-to-one ratio between instructor and student. For the most part, the videotaperecorder has been used on a one-to-one student-teacher ratio. The outstanding feature of the VTR is that of immediate audio and visual feedback. The fidelity is excellent. It is as good as, or better than, motion picture film. In addition, no processing is necessary and the videotape, like sound recording tape, can be used more than once.[3] Many different groups have used VTR for various reasons, from news on television to coaches of various sports, using it as immediate feedback for their students. What a delight to a football coach to have a facility which enables him to have instant replay for every practice scrimmage play, as well as every game play. In this manner the coach and team still have the "feel" of the game with them when they watch the replay, rather than waiting a week for the game films to be processed.[4]

The VTR has been used well in the field of music in conducting classes, studio instrument pedagogy and student teaching.[5] In the conducting class, corrections could easily be made and seen for conducting patterns, cuing styles, techniques, stance, showmanship and stage presence.[6] The studio teacher has utilized VTR in teaching instrumental techniques which include embouchures, hand positions, posture, etc. Also, VTR has helped the student teacher by enabling him to check up on delivery methods, mannerisms and conducting techniques. The student teacher could focus in on the pupils to see if he is "getting thru" or if he is just marking time. In all these uses, the individuals get immediate feedback reinforcement from the VTR. (This allows all concerned to make an "on-the-spot" evaluation, which formerly might not have been possible.) All VTR tapes are made available to the students between classes.

Using VTR in all these various ways is fine; however, it still is not making it a tool for the individual who needs it most — the public school, and more specifically, the music director. For the public school teacher, here is another means of communication between himself and his students. Communication is effected by two forms of language. The first (non-verbal) is direct-representation.[7] It includes imitation, the mirror, direct stimulation of physical sensation, audio tape and videotaperecorder. The second form of language is indirect and includes words which stimulate to action, reason, thinking, etc.

In music it is clear that important sensory factors include visual, kinesthetic and auditory which interrelate.[8] If a student were to use a mirror to play in front of, he would have both audio and visual images revealed to himself. The same would happen with VTR, with the addition, that in viewing himself on the VTR, the student will become more objective as if he were viewing someone else. Furthermore, when using VTR the student may concentrate on his music and later give his undivided attention to evaluation of the VTR.

Through the use of VTR the student can be introduced to the correct manner of developing a skill, especially a motor skill, through imitation. The student may view the teacher correcting the student, or he may view the teacher or an accomplished musician executing the skill correctly. Tied in with this type of instruction, the student may view the teacher corercting him, and thus he can watch the taping of the complete process of incorrect behavior, modification of behavior, and correct terminal behavior, all through immediate feedback.

Audio-tape devices have been recommended as a method for restructuring a school curriculum. A curriculum is revised, in many instances, simply by scrambling up the traditional structure of subject matter.[9] School administrators and teachers are operating under the illusion that if subject matter is structured, then it is difficult for the student not to otbain and retain knowledge (Bruner, 1960). Education must move ahead in what is to be taught and how it is to be taught. The videotaperecorder is a device by which educational material can be presented in such a manner as to attach and hold the attention of the student. Using VTR the student will be positively reinforced because his preparation and follow-through is not presented with punitive methods to force the students to study.[10]

Introducing VTR into the classroom is not going to solve the problems of the classroom or studio teacher. The instructor must prepare programmed material so that the student is successful with the material. Also, the student can cover successive tapes at his own apace.[11] The mistake of an inexperienced teacher is that he will attempt to substitute the VTR for the teacher. The videotaperecorder is an aid of the teacher whereby the student can add to a multiplicity of experiences and behavioral modification.[12]

In the following pages is briefly set forth the use of VTR as stimulus and reinforcement in behavioral modification.

Behavioral Modification Through Videotaperecorder

"One picture is worth one thousand words." Not the picture we may have of ourselves, but rather a "real" picture as others see us.

The videotaperecorder (VTR) affords just such a picture.

Videotaperecorders have been used in various capacities of the educational field for several years and as the cost becomes less prohibitive more systems will no doubt take advantage of it. As an aid to the football coach and marching band director, the VTR is a descendant of the 8 mm movie camera; but, unlike movies, the VTR does not need a week to ten day lapse for processing from the event to the viewing. Here we have the outstanding feature of VTR — immediate feedback. The videotaperecorder has been used in the field of music education for several years, but usually on a one camera to one person basis only, with the exception of the aforementioned marching band director. Therefore, the question arose as to the validity of the VTR as an aid to the teacher in a group situation with respect to behavioral modification through immediate feedback. Using immediate feedback as a reinforcement, the individual student may modify his own behavior with minimal assistance from the director.

The main consequences to the student is a positive reaction from the director. Though the student may not be aware of it, there are further consequences such as better sound, an increase in alertness to the music, and to the director, as well as a unity of the music produced by the group.

The group which helped with this project was the Indian Creek Junior High School Band, Shawnee Mission (Kansas) Public Schools. Psycho-motor skills, with which the group was having difficulty, were placed on an evaluation sheet (TABLE NO. 1) with a ten-point performance scale. As a reliability check, the teacher acted as sole judge, though the students were allowed to evaluate themselves and compare with the teacher. This procedure was found helpful because in many cases it was found that the students felt that they were responding in a specific manner, when in reality they were not. As an example, considering posture, it was noticed that some students had slouched for so long that even viewing themselves slumped over did not motivate them to modify their behavior. In such a case the teacher might physically straighten the individual, and having taped the incident, the individual gained not only an aural image reinforcement of himself, but also a definite kinesthetic reinforcement. Reliability checks also include data kept on a weekly basis for five weeks. Also, VTR tapes of all rehearsals have been kept.

To control the environment (stimulus control), the group met at the regular class time every day. Using music which was somewhat familiar to the students, it was thought that concentration could be centered on modification of the specific psycho-motor skills. In this case the group was kept to a schedule, which though planned daily, was flexible to the needs of the students. (See TABLE NO. 2, which includes the 1st, 2nd, 3rd, 4th, and 5th weeks)

The terminal behavior was the correct acquisition of certain psycho-motor skills which are important in playing music. Not all of the students responded within the five week project period, though some have modified behavior since the project ended. The teacher has been gratified greatly not by just the terminal behavior, but the change in attitude of many of the students who did respond to the behavioral modification project. Due to immediate feedback reinforcement as a result of using VTR, TABLE NO. 3 shows the behavioral modification of four individuals between the first and last week of the project.

"Music stirs the soul," but first, one must learn how to play and how to listen!

Applying the Videotaperecorder Program To the Rehearsal

To initiate this VTR project the concert band was divided at random with the only stipulation that if possible, a balanced instrumentation be maintained. Structuring the VTR into the regular rehearsal involves an understanding of the equipment and how to use it. The equipment is not very complicated, but it is advisable to have qualified personnel show the instructor how to operate the camera and recorder. With the exception of the camera, operating the videotaperecorder is slightly more complicated than a regular tape recorder. The camera involves learning to use the "Zoom" lens while maintaining the focus. For this reason it is ideal if another person can operate the equipment while the teacher continues with the rehearsal.

Using VTR in the rehearsal can be an asset if the teacher remembers that VTR will not do his job. VTR includes equipment which will help the teacher do the job. It was found that recording for a long period of time loses a lot of impact if everything recorded is viewed. However, best response was given when the VTR was used to record not in excess of ten minutes at one time and not more than twice in one rehearsal.

The cameraman must realize that it is better to record either the whole group or small groups at a time. The only instance during

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the project when it was felt necessary to single out individuals, was to study the embouchure. When the group views the tape, no student should feel isolated.

Best results in taping are achieved by seating the band in a block pattern with a wide aisle on one long side of the room. The opposite aisle is taken by curving several chairs at an oblique angle. In this way, the camera, which is set on rollers along the wide aisle, can easily get a clear picture of each student in every row. Camera cables should be taped to the floor with masking tape, or taped together for easier handling and greater mobility. All the normal commotion of rehearsal is more intense due to extra personnel and additional equipment. Therefore, it takes several days before the students, though aware of the recorder and camera, begin to feel completely natural. (TABLE NO. 4)

Data Processing and Project Results

In this project the band director, Lelia Foote, acted as sole judge for the control group and the experimental group. There was a total of six evaluation psycho-motor skills over a period of five weeks.

On the evaluation sheet (TABLE NO. 1) there are six main headings with thirty-five specific categories. For the sake of processing, the categories were deleted to thirteen which include sitting, back, arms, feet, head, breathing, back expansion, cheeks, eyes, instrumental position and two categories on embouchure.

The evaluation tabulations were compiled on a master sheet. The data on the master sheet were transferred to computer memory banks at the Computer Assistance Instruction Lab, Bingham Junior High School, Kansas City, Missouri. Several types of statistics were gathered to realize the effectiveness of VTR. A program was set up that would produce a type of line graph which would show any progress in any category. Negative results were not considered.

Two more statistics were gathered which dealt with the means and standard deviation for each of the thirteen categories. The first program included all but the percussionists. Feeling that if everyone who started out with a point evaluation of eight or higher were eliminated in specific categories by introducing a number with which the computer refused to work, then those categories which had a positive result could easily be seen. In the test in which everyone was included there was only one category which had a significant standard deviation. The second test, while having only two categories with a significant standard deviation, did have a stronger positive result in all but one category. (TABLE NO. 5)

Performance Scale of Psycho-motor Skills in Music

Instructions:

a. Each behavior is to be rated.
b. The rating one (1) representing a poor performance, and ten (10) representing an excellent performance will be used.
c. Place a check mark under the number which most nearly describes execution of the behavior.

TABLE NO. 1

PSYCHO-MOTOR SKILLS	1	2	3	4	5	6	7	8	9	10
POSTURE: 1. Sitting on front half of chair										
2. Back erect										
3. Arms (elbows) away from rib cage										
4. Foot flat on floor										
5. Heads up										
RHYTHM: 1. Heel movement demonstrates the beat										
BREATHING: 1. Mouth opens to inhale										
2. Back expands when inhaling										
3. Cheeks are not puffed while exhaling										
ALERTNESS: 1. Eyes are up to watch the Conductor										

TABLE NO. 1 (continued)

PSYCH-MOTOR SKILLS	1	2	3	4	5	6	7	8	9	10
EMBOCHURE: Flute										
1. Firm chin										
2. Lower lip flat against teeth										
Clarinet and Saxophone										
1. Mouth in oval (whistle) formation										
2. Part of lower lip visible										
3. Firm chin										
Brass										
1. Lips in firm pucker										
2. Half of Embouchure includes lower lip										
PLAYING POSITION FOR INSTRUMENTS:										
Flute										
1. Held in horizontal position										
Clarinet										
1. Bell of instrument above knee										
Saxophone										
1. Held at side of body										

TABLE NO. 1 (continued)

PSYCHO-MOTOR SKILLS	1	2	3	4	5	6	7	8	9	10
Trumpet										
1. Lead pipe is in horizontal position										
2. Tips of fingers on valves										
French Horn										
1. Bell of horn rests on right knee										
2. Right hand is cupped										
3. Right hand rests inside bell										
Trombone										
1. Lead pipe is in horizontal position										
2. Left Index finger on lead pipe										
3. Right wrist flexible										
Baritone										
1. Tips of fingers on valves										
2. Left hand on outside tubing										
3. Bell tubing held at 75 to 80 degree angle										
Tuba										
1. Tips of fingers on valves										
2. Bell held at 75 to 80 degree angle										
Percussion										
1. Left wrist action										
2. High stick action										

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MODIFICATION SCHEDULE

Table No. 2

FIRST WEEK

MONDAY
Explanation of Procedure
Rehearse:
VTR
Chorale: "Saviour of the Nations, Come."
View VTR
Self-Evaluation
Continue Rehearsal

TUESDAY
Warm Ups
VTR
Chorale: "Saviour of the Nations, Come."
"Big Band Dixieland."
View VTR
Continue Rehearsal

WEDNESDAY
Warm Ups
VTR
Chorale: "Deck Thyself, My Soul, With Gladness."
"Marching To Pretoria"
View VTR

THURSDAY
Warm Ups
VTR
Chorale: "Saviour of the Nations, Come."
View VTR - Point out corrections to be made
Re-tape
"Marching To Pretoria"
View VTR - Discussion
Continue Rehearsal

FRIDAY
Warm Ups
Chorale: "Saviour of the Nations, Come."
VTR
"Fantasy On Chester"
View VTR - Discussion
Continue Rehearsal

SECOND WEEK

MONDAY
Warm Ups
Chorale: "Deck Thyself, My Soul, With Gladness."
VTR
"Occasional Suite"
View VTR - Discussion
Continue Rehearsal

TUESDAY
Warm Ups
VTR
"Fantasy On Chester"
Look at VTR - Discussion
Re-tape
"Great Gate of Kiev"
View VTR
Continue Rehearsal

WEDNESDAY
Warm Ups
VTR
Chorale: "Saviour of the Nations, Come."
"Fireworks Music"
View VTR - Discussion
Continue Rehearsal

THURSDAY
Warm Ups
VTR
"Occasional Suite"
View VTR - Discussion
Re-tape
"Basin Street Blues"
View VTR - Discussion
Re-tape
"Cherish"
View VTR - Discussion
Continue Rehearsal

FRIDAY
Warm Ups
VTR
"Fantasy On Chester"
"Occasional Suite"
"Fireworks Music"
View VTR - Discussion (Two-week Summation)

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THIRD WEEK

ONDAY
Warm Ups
Chorale: "Deck Thyself, My Soul, With Gladness."
"Great Gate of Kiev"
"Cherish"

UESDAY
Warm Ups
VTR
"Fantasy On Chester"
"Raindrops Keep Falling On My Head"

EDNESDAY
Warm Ups
Chorale: "Saviour of the Nations, Come."
View VTR
"Great Gate of Kiev"
"Basin Street Blues"

HURSDAY
Warm Ups
VTR
"Fantasy On Chester"
"Great Gate of Kiev"

FRIDAY
Warm Ups
View VTR
"Occasional Suite"
"Slavonic Dances"

FOURTH WEEK

MONDAY
Warm Ups
VTR
"Great Gate of Kiev"
"Little Suite for Band"

TUESDAY
Warm Ups
View VTR
"Proud Heritage March"
"Raindrops Keep Falling On My Head"

WEDNESDAY
Warm Ups
VTR
"Slavonic Dances"

THURSDAY
Warm Ups
View VTR
"Proud Heritage March"
"Slavonic Dances"

FRIDAY
Warm Ups
VTR
"Great Gate of Kiev"
"Cherish"

FIFTH WEEK

MONDAY
VTR
Warm Ups
"Occasional Suite"
View VTR - Discussion
Re-Tape
"Greensleeves"
View tape - Discussion
Continue Rehearsal

TUESDAY
VTR
"Occasional Suite"
View VTR - Discussion
Re-tape
"Marching To Pretoria"
View tape - Discussion
Re-tape
"Big Band Dixieland"
View VTR - Discussion
Contiride Rehearsal

WEDNESDAY
VTR
Warm Ups
Chorale: "Saviour of the Nations, Come."
"Occasional Suite"
View VTR - Discussion
Re-tape
"Little Suite for Band"
View VTR - Discussion

THURSDAY
VTR
Warm Ups
"Raindrops Keep Falling On My Head"
"Occasional Suite"
View VTR - Discussion
Re-tape
"Little Suite for Band"

FRIDAY
VTR
Warm Ups
"All Thru The Night"
View VTR - Discussion
Re-tape
"Fireworks Music"
View VTR - Discussion
(Summation of Five Week Project)

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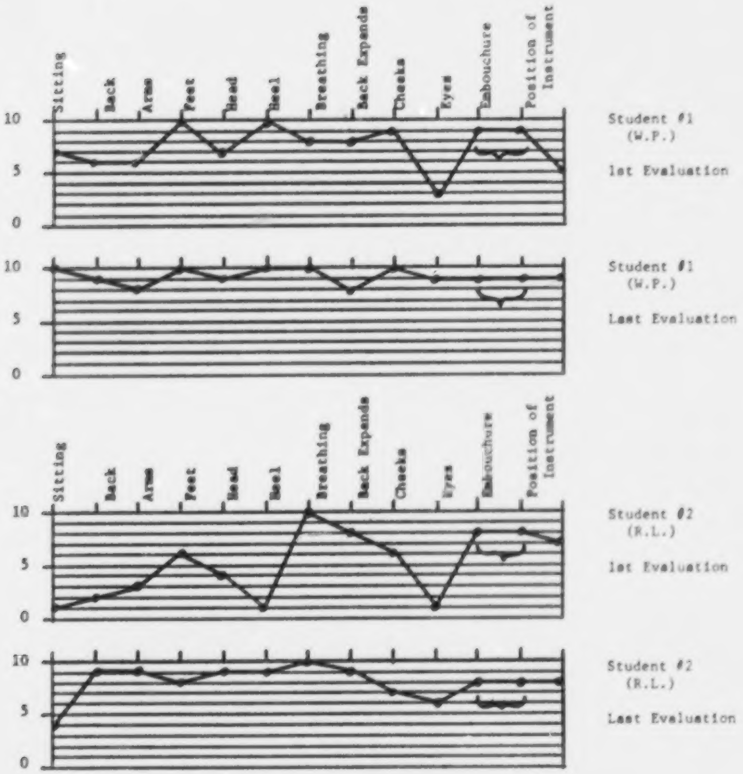
Behavioral Modification Results

TABLE NO. 3



SCALE: 1-10; 1 being very poor, 10 being excellent.

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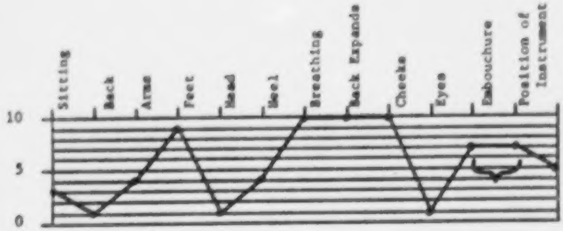
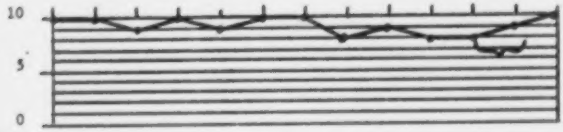
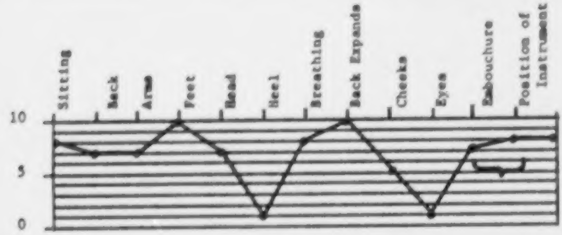
TABLE NO. 3 (continued)



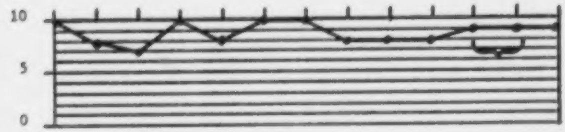
Student #3
(D.C.)
1st Evaluation



Student #3
(D.C.)
Last Evaluation



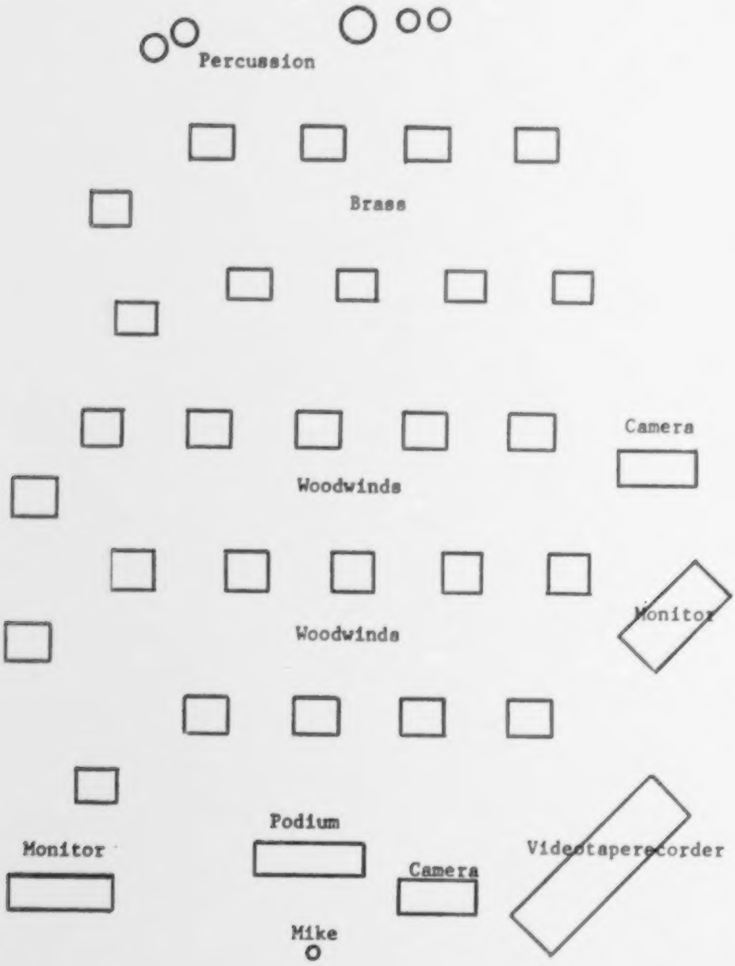
Student #4
(M.B.)
1st Evaluation



Student #4
(M.B.)
Last Evaluation

Classroom Arrangement

TABLE NO. 4


Percussion
Brass
Woodwinds
Camera
Woodwinds
Monitor
Podium
Monitor
Videotaperecorder
Camera
Mike

Statistics

Table No. 5

W - Control Group

V - Experimental Group

$\bar{X}$ - Means

Category One

W - $\bar{X}$ equals 1.78751
V - $\bar{X}$ equals 6.94444
Standard Deviation equals 3.77677
T value equals 1.36591

Category Two

W - $\bar{X}$ equals 2.05263
V - $\bar{X}$ equals 3.35714
Standard Deviation equals 3.57351
T value equals 0.36505

Category Three

W - $\bar{X}$ equals 3.4
V - $\bar{X}$ equals 3.0
Standard Deviation equals 3.64626
T value equals 0.109701

Category Four

W - $\bar{X}$ equals 2.0
V - $\bar{X}$ equals 5.18182
Standard Deviation equals 3.03315
T value equals 1.04901

Category Five

W - $\bar{X}$ equals 2.71429
V - $\bar{X}$ equals 3.125
Standard Deviation equals 3.02726
T value equals 0.135672

Category Six

W - $\bar{X}$ equals 2.53846
V - $\bar{X}$ equals 5.2
Standard Deviation equals 4.28871
T value equals 0.620592

Category Seven

W - $\bar{X}$ equals 1.57143
V - $\bar{X}$ equals 1.5
Standard Deviation equals 1.20515
T value equals 0.0592695

Category Eight

W - $\bar{X}$ equals 1.5
V - $\bar{X}$ equals 1.75
Standard Deviation equals 1.45488
T value equals 0.171836

Category Nine

W - $\bar{X}$ equals 1.64286
V - $\bar{X}$ equals 1.0
Standard Deviation equals 2.92488
T value equals 0.219789

Category Ten

W - $\bar{X}$ equals 4.71429
V - $\bar{X}$ equals 3.21429
Standard Deviation equals 3.93449
T value equals 0.381244

Category Eleven

W - $\bar{X}$ equals 2.25
V - $\bar{X}$ equals 1.5
Standard Deviation equals 3.3665
T value equals 0.222783

Category Twelve

W - $\bar{X}$ equals 1.5
V - $\bar{X}$ equals 1.88235
Standard Deviation equals 2.93433
T value equals 0.130303

Category Thirteen

W - $\bar{X}$ equals 2.95238
V - $\bar{X}$ equals 3.53333
Standard Deviation equals 4.04086
T value equals 0.143769

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Bibliography

BOOKS

Dykema, Peter K., and Gehrkens, Karl W. **THE TEACHING AND ADMINISTRATION OF THE HIGH SCHOOL MUSIC**. Boston: C. C. Birchard and Company, 1951.

Kaplan, Burton. **A POINT OF VIEW OF VIOLIN TEACHING**: Toward the Creation of a Method of Methods. New York, N.Y.: by the author, 865 West End Avenue, 1967.

Neidig, Kenneth L. **THE BAND DIRECTOR'S GUIDE**. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1964.

Skinner, B. F. **THE TECHNOLOGY OF TEACHING**. New York: Appleton-Century-Crofts, 1968.

JOURNALS

"Audio-Visual Guide." **THE INSTRUMENTALIST**, XXI (February, 1967), 30.

Daellenbach, Charles. "Videotaperecorders at Eastman." **THE INSTRUMENTALIST**, XXI (May, 1967), 26-27.

Fisher, Larry. "Videotaperecorders." **THE INSTRUMENTALIST**, XXII (May, 1968), 32-33.

Kitchen, Otis. "Videotaperecorders at Elizabethtown College." **THE INSTRUMENTALIST**, XXII (January, 1968), 24-25.

Skinner, B. F. "Reflections on a Decade of Teaching Machines." **TEACHERS COLLEGE RECORD**, (1963), 65, 168-177.

PUBLISHED REPORTS

A Project For the Improvement of Music Education at Elementary, Junior High, Senior High, and College Levels Through the Use of Non-Book Instructional Media. Thomas Vasil, Project Director. Washington, D.C.: U.S. Department of Health, Education, & Welfare, 1968.

Creativity in Music Education for Connecticut Schools. Lloyd Schmidt, Music Consultant. Hartford, Conn.: Connecticut State Department of Education, 1969.

Educational Technology in Action. Donald Shetler & Paul Eichmann. Washington, D.C.: Department of the National Association, 1969. (Bibliography prepared by C. Charles Daellenbach.)

Educational Technology in Action. Donald Shetler & Paul Eichmann. Washington, D.C.: Department of the National Association, 1969. (Bibliography prepared by Paul Eichmann.)

Instructional Television. Mr. Hickox, Audio-Visual Department Head. Shawnee Mission, Kansas: Shawnee Mission Public Schools, 1970.

UNPUBLISHED WORKS

Brown, Elwood H. "A Study of the Application of Creativity in the Teaching of Secondary School Music." Unpublished DMA dissertation, K. C. Conservatory of Music, 1968.

Skinner, B. F. "Operant Behavior." A chapter in Werner Honig (Ed.), **OPERANT BEHAVIOR AND PSYCHOLOGY**. New York: Appleton-Century-Crofts, to be published.

"What is Behavior Modification?" An unsigned paper on the Medical Model obtained through the School of Education, U.M.K.C., 1970.

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Footnotes

1 Kenneth L. Neidig, **THE BAND DIRECTOR'S GUIDE** (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1964), p. 189.

2 Peter W. Dykema and Karl W. Gehrkens, **THE TEACHING AND ADMINISTRATION OF HIGH SCHOOL MUSIC** (Boston: C. C. Birchard and Co., 1951), p. 432.

3 "Audio-Visual Guide," **THE INSTRUMENTALIST**, XXI (February, 1967), 30.

4 Larry Fisher, "Videotaperecorders," **THE INSTRUMENTALIST**, XXII (May, 1968), 32.

5 Otis Kitchen, "Videotaperecorders at Elizabethtown College," **THE INSTRUMENTALIST**, XXII (January, 1968), 24.

6 Charles Daellenbach, "Videotaperecorders at Eastman," **THE INSTRUMENTALIST**, XXI (May, 1967), 26.

7 Burton Kaplan, **A POINT OF VIEW OF VIOLIN TEACHING: Toward the Creation of a Method of Methods.** (New York City, New York: by the author, 1967), p. 25.

8 Ibid., p. 27.

9 B. F. Skinner, "Reflections on a Decade of Teaching Machines," **TEACHERS COLLEGE RECORD**, 1963, 171.

10 Ibid., p. 172.

11 B. F. Skinner, **THE TECHNOLOGY OF TEACHING** (New York: Appleton-Century-Crofts, 1968), p. 55.

12 Ibid., p. 6.

DEVELOPMENT OF A METHODOLOGY FOR TRANSCRIBING THE ORGAN MUSIC OF BACH FOR BAND

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Note: This paper constitutes the second chapter of a dissertation entitled "Band Transcriptions of the Organ Music of Johan Sebastian Bach: A Development of a methodology for transcribing, an appraisal of available transcriptions, and three model transcriptions" for the degree Doctor of Music Education. University of Oklahoma, 1967.

* * * *

In selecting criteria for the development of a methodology for transcribing Bach's organ music to the medium of the band, several considerations seem cogent. Foremost is the necessity of understanding some of the principles of organ registration. The color resources of organs vary as their sizes vary. A large organ will contain many ranks of pipes not included in smaller organs. The number of manuals, or keyboards, will vary also, and will determine the number of contrasting ranks or combinations of ranks which can be used at one time. To be sure, there are means by which the tone color can be changed within a piece and such changes can be made rapidly, too. But with additional manuals the organist can change colors more quickly and even leave the original color intact in case he would like to return to that color or even create an interplay between the two colors. Small organs usually have two manuals along with the pedal keyboard. Larger instruments have three, four, five, or more manuals. These manuals often control ranks of pipes which are placed in separate locations in the church or other structure.

Organ pipes are grouped together into ranks of pipes emitting the same tonal quality throughout the range of the keyboard. The organ uses a wind supply blowing through its pipes to produce the sound. In this respect, the organ is a wind keyboard instrument. The band is a wind instrument, too. The individual instruments making up the band or wind ensemble are not as diverse as the many shapes and sizes of pipes available to the organist. The wind source, too, is considerably different. The organ has an unlimited wind supply available mechanically. The wind players of the band must supply wind from their own lungs. Therefore, long lines cannot continue as endlessly in the band as when performed on the organ. Points for breathing and overlapping of breath points must be established.

Even though scoring for the full band has been frequent in the

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past, many band arrangers have divided the band into woodwind, brass, and percussion choirs in more recent arrangements. This type of grouping could be equated with the ranks of the organ. Only two, or possibly three, tone colors are allowed by this division. The use of smaller divisions is necessary. The band or wind ensemble can be further divided, although some ranks, or choirs, would be incomplete at the upper or lower end of the range. The flute rank would sound the highest with the piccolo, flute, and alto flute forming its components. Even the addition of the bass flute would not allow this to be a rank with a complete treble and bass range. Besides, the bass flute is a rare instrument, and is used less often than the alto flute. The double reed rank is complete with oboes, alto oboe (English horn), bassoon, and contrabassoon. Many bands neither have access to an alto oboe or a contrabassoon, nor have a player with an instrument available. Just the oboes and bassoons form a complete rank with full range. The clarinet choir movement, or emphasis, has informed and encouraged band directors and arrangers to utilize the small E flat clarinet, alto clarinets, and contrabass clarinets in addition to the standard B flat soprano and bass clarinets. This family has the widest range of any in the band and is somewhat uniform in the tone color throughout the combined ranges. The saxophone family can be more complete with the addition of the soprano and bass to the usual quartet of 2 altos, tenor, and baritone saxophones.

The brass members of the band are more problematic because of the overlapping of timbres of the individual instruments. The soprano brass may be dark (flugelhorn), mellow (cornet), or bright (trumpet). This distinction is often very slight. The mid-range has the dark or mellow French horns and the brightness of the trombones and tenor trumpets. The bass register uses the tuba for dark sounds and the bass trombone for brighter hues. The baritone horn is a mellow bass or middle voice.

Instruments of the percussion section may be used in transcribing organ music for the band. Since they are not actually duplicating or even emulating a sound or rank from the organ, the percussion instruments must be chosen and used with the utmost care and discretion. The kettle drums can be used to sustain bass tones. The triangle or light cymbals might be used to heighten climaxes of a rather bright composition. Keyboard-mallet percussion instruments could possibly reinforce melodic lines, especially those which are of a brighter character and/or active rhythmically. The use of the snare drum and bass drum is more questionable and should be omitted from the score.

The instruments listed and described in the foregoing paragraphs are often found in bands. Those which are considered as unusual today are being used more and more and may become commonplace in the near future. The addition of small cornets and trumpets and tenor range instruments of the same categories will help fill out the brass choir into separate ranks of dark, mellow, and bright brass. It seems that the future of the wind band must rest with its development of full range, individual choirs, or ranks, of instruments.

It is not within the scope of this paper to discuss the different organ pipes, their resultant tone colors or their band or orchestral equivalent. Such information is available in numerous sources. Two aspects of organ registration are pertinent here. These will be discussed in the paragraphs which follow.

The first principle of organ registration which is applicable to transcribing for band is the use of octave doublings for coloristic purposes. The doubling of a melodic line in octaves, double octaves and the like is a widely used technique of both organ registration and orchestration. In the case of the organ, the performer doubles a line at the octave by choosing a pipe to couple with the present one. For example, the 8-foot pipe on the manual sounds in unison with the written pitch. Thus middle c ($\underline{c}'$) sounds middle c ($\underline{c}'$). The 4-foot pipe will sound an octave higher. Hence, $\underline{c}'$ written will sound $\underline{c}''$ when played on the 4-foot pipe. The 2-foot pipe sounds another octave higher, or two octaves above the written note. A written $\underline{c}'$ played on the 2-foot pipe will sound $\underline{c}'''$ ($\underline{c}^{3}$). The 1-foot pipe and ½-foot pipe will sound three and four octaves higher than the written pitch. In like manner, the 16-foot pipe will sound an octave lower than the notation. Written $\underline{c}'$ will sound $\underline{c}$ (the octave below middle $\underline{c}$). The 32-foot pipe sounds two octaves lower than the notation so that $\underline{c}'$ sounds $\underline{C}$.

By pulling the stops for the 8-foot pipe and the 4-foot pipe on a given rank and manual, both octaves will sound simultaneously by depressing a single key on the manual. Thus $\underline{c}'$ written for 8-foot and 4-foot pipes will sound $\underline{c}'$ and $\underline{c}''$ as a collective color. By combining 8-foot, 4-foot, and 2-foot pipes, one key will actuate three pipes and result in $\underline{c}'$, $\underline{c}''$ and $\underline{c}'''$ sounding synchronously. The principle applies to combinations of any lengths of pipes. This type of combining pipes allows the organist to play rich, full lines composed of two or more octaves while depressing only a single key at a time.

On the pedal keyboard, the written sound is produced on the 16-foot stop. Some sources, performers and instrument makers do not make a difference in pipe lengths for the manuals and the pedal keyboard which are necessary to produce the unison. The 32-foot and 64-foot pipes sound an octave and a double octave lower, and the 8-foot, 4-foot, and 2-foot pipes sound the octave, double octave and triple octave higher, respectively. The doubling of the 16-foot and 32-foot pipes in the pedal is a common, accepted practice for the organist to use in any composition. The organ works of Bach are treated in this manner quite often, especially in the *doppic pedale* effect[1]. The Classical use of the violoncello and contrabass reading and playing from the same printed part exemplifies this principle orchestrally. The cello would be equivalent to the 16-foot stop and the bass would sound an octave lower as a 32-foot stop would.

In orchestration it is necessary to use two instruments to produce octave doubling, three instruments for doubling at the octave and double octave, and so on. Thus a flute and piccolo reading from the same music will produce notes an octave apart. This would be comparable to the 8-foot and 4-foot pipes of the manuals. A bass flute added to this would result in the octave below the flute sounding also, or the equivalent of the 16-foot, 8-foot, and 4-foot pipes sounded together.

The second principle of organ registration which serves as a basis for the present study is called *mutation* and its corollary, *mixture*. The term, mutation, comes from the Latin *mutare* which means to change. In the case of the organ, the change is that when a note is played, a different tone sounds. The change is not simply the octave doubling as described above. Rather, different letter names are involved. These tones are partials found in the harmonic series. Fractions are used to identify the lengths of these pipes. A 2 2/3 pipe is between the 4-foot and 2-foot pipes which are the octave and double octave above the written note as discussed above. The tone in the harmonic series between these tones is a twelfth (an octave and a fifth) above the fundamental. This is the tone which sounds for the 2 2/3-foot stop. Consequently, a 2 2/3-foot stop playing middle c (c′) actually sounds g″. This is called the "nastard" or "nasat." The 1 1/3-foot pipe sounds an octave higher than the 2 2/3-foot pipe. These are the mutation stops used most frequently. Two others are used fairly frequently also. The 1 3/5-foot pipe sounds two octaves and a major third (a seventeenth) above the fundamental. This stop is called the "tierce." To produce this tone an octave higher, the 4/5-foot pipe is employed. The 1 1/7-foot stop is sometimes used, but not nearly as frequently as those already described. The 1 1/7-foot stop sounds the seventh tone of the harmonic series, or two octaves and a minor seventh (flat 21st) above the written note and/or pressed key. This stop is called the "septiemé." All of the above stops are rarely, if ever, used alone as it would result in the organ becoming a transposing instrument. Rather, these stops can be added to fundamental, or fundamental and octave pipes to establish tone qualities with increased "harmonic activity" or harmonic content by strengthening certain partials of the harmonic series. These combinations are quite effective as solo stops.

The corollary principle of *mixture* is based upon these mutation stops. A mutation stop is a single rank to be added to other stops. The mixture stop, on the other hand, is a pre-set combination utilizing the mutation stops with given fundamental and octave stops. Quite often the fundamental is omitted. Mixture stops involve from two to eight or more ranks of pipes. Mixture stops have "breaks" where the exact combination will change in its make-up. Gleason[1] supplies the reader with details of several standard and some sample mixture stops. The particular components of the mixture stops vary from instrument maker to instrument maker and even from instrument to instrument made by the same manufacturer. The acoustics of the room and the desires of the designer of the instrument are factors which determine the exact specifications of any organ.

In orchestration, composers and arrangers are most often content to use instruments for their single and collective colors without creating new colors by doubling at intervals other than the unison, octave or octave multiples. Mixture, as a principle of orchestration, is not known to be used. Scoring along the principles of mutation registration is found in two familiar compositions for orchestra. In Maurice Ravels' famous *tour de force* of orchestration, *Bolero*, there are two instances of what the present writer has chosen to call *mutation scoring*. There is one illustration of mutation scoring in Paul Hindemith's *Sinfonische Metamorphosen nach Themen von Carl Maria von Weber*. *Mutation scoring* is the technique of orchestration which is comparable to the use of mutation stops on the organ.

The first known examples of *mutation scoring* are found in the *Bolero* of 1928. Example One depicts the recurring melody scored by Ravel for solo French horn as the fundamental (8-foot stop), the celesta sounding the octave (14-foot) and double octave (2-foot), and the two piccolos supplying the twelfth (2 2/3-foot) and the seventeenth (1 3/5-foot). This type of orchestral usage continues from measure 149 through measure 165, completing the entire sixteen measure melody.

In measures 167 to 183, the melody is again presented by *mutation scoring*. Example Two shows the first four bars of this section of *Bolero*. Here the single and double reed instruments create the new sound. The alto oboe (English horn) and 2nd clarinet sound the fundamental (8-foot), the oboe d'amour sounds the octave (4-foot), and the 1st clarinet and oboe sound the twelfth (2 2/3-foot).

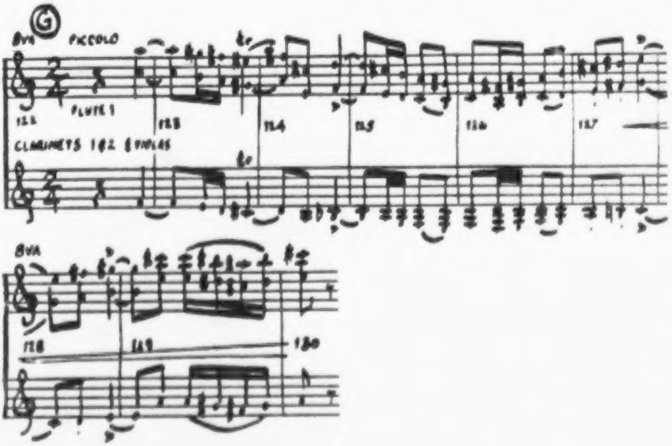
In measures 293ff., Ravel uses a close scoring of root, 3rd and 5th, each doubled at the octave, and the fundamental or root doubled at the fifteenth (double octave). This statement of the melody is scored in thirteen instrument parts. This could be labeled as mutation scoring, after a fashion, with the 8-foot and 4-foot not sounding. This tends more toward *mixture scoring* with the root here being equivalent to the 2-foot stop; its octave corresponds to the 1-foot pipe and the double octave would be like the 1 3/5-foot and 4/5-foot pipes of the organ. The fifth and its octave are similar to the 2 2/3-foot and 1 1/3-foot stops. Since the parallel scoring does not last for more than four measures before the parts begin separating from the combination, this example is not included here.

EXAMPLE ONE. See *Bolero* (1928) by Maurice Ravel
Measures 149-152 (to 165)

EXAMPLE TWO. See *Bolero* (1928) by Maurice Ravel
Measures 167-170 (to 183)

It should be pointed out at this time that these are definitely examples of *mutation scoring* for the resulting combined sounds create a sonority which emulates the organ combination made with mutation stops. When performed well in tune, the ear has difficulty detecting the separate elements or instruments making up the combined timbre. As in Gestalt psychology, the whole of the combination is greater than the sum of its parts. Heinz Becker' errs in his discussion of these examples from *Bolero* by stating that they are examples of polytonality. Ravel does use different key signatures, but only to facilitate the reading. The examples included herein are shown with the accidentals in order that the adjustments for the harmonic series of each tone can be readily seen by the reader. Becker errs again when he cites measures 293ff. as another example of polytonality. Not only does the parellelism cease after four measures, but Becker compounds his error by failing to transpose the part for the "Petite Trompette in Ré" to its sounding key. He calls it the polytonal key of B flat, which is the seventh when compared to the sounding C of the fundamental. When transposed, the trumpet in D sounds the C an octave higher than the fundamental.

The second familiar composition possessing an example of *mutation scoring* is *Sinfonische Metamorphosen* (1943) by Paul Hindemith. Measures 122 to 130 of the first movement are reduced in Example Three to show the voicing more readily than in the score. The clarinets and violas sound the fundamental while the 1st flute plays the nasard (twelfth) and the piccolo plays the tierce (seventeenth). This is equivalent to the combination of 8-foot, 2 2/3-foot, and 1 3/5-foot pipes.



EXAMPLE THREE: Paul Hindemith: SINFONISCHE METAMORPHOSEN (1943) Measures 122-130.
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Mr. Spencer H. Norton, Research Professor of Music at The University of Oklahoma states that he has used *mutation scoring* in several of his orchestral compositions.[1]

Thus far, only the scoring of the colors of the organ to the palette of the band or wind ensemble have been discussed. Certainly, other matters are important factors in developing a methodology for transcribing Bach's organ music for band. These factors will now be considered.

With the techniques required of musicians today, it would seem unnecessary to transpose the key of any of the works. In the past, flat keys have been favored by the players in bands and sharp keys by orchestral players. The difficulty of a band composition or arrangement was often determined by its distance from the concert keys of B flat or g. But today, compositions have become so highly chromatic in nature that familiarity with both flat and sharp keys is necessary. The teaching of both groups of keys occurs at an early stage of the player's musical education. It would appear unnecessary to transpose an organ work from a sharp key to a flat key for technical facility. The transposition due to factors of range of the instruments may still be required. But with the development of full ranks or choirs of instruments, this too seems unnecessary.

The altering of a measure signature and/or the rhythmic values is not required either. Many arrangements in the past have changed measure signatures so that the quarter note was the constant "beat note" or basic duration. This practice limited the performers' familiarity and ability with rhythm, and perpetuated making the same adjustments in other arrangements. This sort of circular cause-effect situation could only lead to further limitations. Demands made in more recent musical literature, including band literature, have helped to relieve this predicament — although it is far from being totally solved. By retaining note values, the transcriber is not required to make a decision for a change in the measure signature or the note values. Rather, the performer's cognizance of rhythm is widened and deepened to include the principle that any note value may be the "beat note" or basic duration, and that all other note values are in proportion to that basis. It would seem likely that more experience in this manner would result in a broader acquaintance and fuller understanding of the functions of rhythm. A part of the methodology for transcribing organ music — veritably any music — would be to retain the measure signature and note values of the original composition.

Closely related to rhythm is ornamentation. The use of ornaments is quite common in the organ music of J. S. Bach and must be considered very carefully in making a transcription for band. On the organ, one key manipulates all of the ranks coupled for that manual and thus the ornament will be consistent in all pipes making up the color. To achieve coupling in a band transcription, it is essential to use separate parts, instruments, and players. It is obligatory that all players have an interpretation of the ornament which is identical. This unanimity can be attained best by writing out the ornament in all parts. This gives assurance that all components of the timbre start on the same pitch, end on the same pitch, and perform identical pitches and rhythms between. This may cause problems in ensemble at first, but the end result of diligent rehearsals will be a higher degree of consistency among those making up the band ensemble color. This practice also aids the band director who is not certain of the stylistic interpretation of each ornament. Trills for only one instrument might not be necessary to write out.

In order to increase the familiarity of players and directors with the ornaments, it is suggested that the symbol for the ornament be included in the score and parts, about the written out interpolation of the ornament, and be placed in editorial brackets. This not only will bring familiarity but should diminish the reservations for having to perform complex looking rhythm-pitch patterns.

Often an orchestrator will develop new melodic lines, or "fillers," from the existing harmonies. This practice can be utilized as long as the new melodies do not detract from the composer's intent. The use of a part playing alternate notes, such as eighth notes in a sixteenth note passage, seems to create ensemble problems rather than simplify those already present. In an organ work which displays very stylistic keyboard writing this might prove to be a valuable technique. Skips or repeated notes within a melodic line are examples of this stylistic writing. The fugue subject of the renowned *Toccata and Fugue in d* [BWV 565] exemplifies this principle.

Tempo indications must be added by the transcriber since many of the Bach organ compositions do not have such markings. If metronome markings are to be given, there should be a range from slow to fast suggesting a suitable latitude for a tempo for that piece. Ritardandos may be added when standard performance practices connote such. Schoarly editions distinguished the editor's additions by placing the indication within brackets. This practice should be employed in all band transcriptions in order to separate the composer's instructions from the editor's interpretations.

This practice would hold true for expression marks also. The dynamics indicated in Bach's works are few and must be left up to the performer. Sometimes indications do offer hints as to how loud a part might be expected to be, such as signifying the portion of the organ to be used (e.g., "Oberwerk" and "Positiv" in the toccata of the "*Dorian Toccata and Fugue in d* [BWV 538]). Other dynamic markings should be shown in brackets identifying the transcriber's and/or editor's suggested relative weight for each part.

The written use of crescendo and diminuendo was not practiced in Bach's time. Changes in dynamcis occurred only by adding or deleting pipes to the registration in the case of the organ. Today this practice of changing registration in the midst of a Bach compo-

sition is not an accepted practice by those organists who seek stylistic authenticity. Perhaps this is due to the inabality to use the hand to manipulate the changing of stops on the organs of Bach's day rather than a true stylistic tent. It would seem proper to retain the voicing or registration throughout a chorale prelude. However, in a long fugue the addition of the 32-foot pipe in the last statement of the subject in the bass, and similar practices, are well within the scope of accepted procedures.

In a fugue, the organist usually registers each manual with a different timbre. The limitation of the two hands requires that all voices in a given staff (i.e., a given manual) be sounded with the same registration. Yet in a chorale prelude of three parts, each voice is performed on a separate manual for the express purpose of keeping the colors different among the voices. Consequently, if it were possible, it is assumed that each voice in a fugue, or other composition in a definite number of parts (as opposed to *freistimmigkeit*), would have differing registration for the individual voices. In the band, the instrumentation of a fugue should not use instruments in the same combination for each entry of the subject (or answer). For example, 3rd cornets doubled with 1st clarinets for the subject, and 3rd clarinets doubled with 1st cornets for the answer do not allow the two voices to have distinguishing tone colors. The duplication of the tone colors causes a "grey" lack of definition of voices. In organ registration, each line is registered with a distinguishing tone quality whenever possible. As this procedure can be followed more fully in band transcriptions to four, five, and even more parts along the lines of the choir or rank principle discussed earlier in this chapter, it would seem that this would be the more desirable plan to follow.

The manifold factors of transferring an organ composition from its original notation to a score for band have been considered here to develop a methodology for transcribing the organ music of J. S. Bach. Although the emphasis has been specifically upon Bach organ works, implications for other music can be found also — whether for organ or some other medium.

Footnotes

[1] William L. Sumner, **Bach's Organ Registration**, Vol. II of **School of Bach-Playing for the Organist**, gen. ed. Gordon Phillips (London: Hinrichsen Edition Limited, 1961), 24.

[2] Harold Gleason, **Method of Organ Playing** (New York: Appleton-Century-Crofts, Inc., 1962), 4-5.

[3] Heinz Becker, **History of Instrumentation**, trans. by Robert Kolben, Vol. XXIV of **Anthology of Music**, ed. K. G. Fellerer (Köln: Arno Volk Verlag, 1964), 32 and 109-110.

[4] Private conversation with the author, December, 1966.

HUMANITIES, INTEGRATED ARTS, AND AESTHETIC EDUCATION

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Note: The following paper is abridged from Chapters One and Two of a dissertation by William D. Gaver written in partial fulfillment of the requrements for the degree Doctor of Musical Arts at the University of Missouri in Kansas City, 1971.

Description of the Problem

The mid-twentieth century has noted a curriculum reform movement in many areas of academia. In music education at both the elementary and secondary levels, there is a growing conviction that the school music curriculum is in urgent need of reform. This view wants music education to change, to re-examine its aims, purposes, objectives, and methods in order that music may become an integral part of aesthetic education.[1]

A trend representative of this view can be found in programs that juxtapose several, many, or all the arts in units of instruction to demonstrate that the arts are potential sources of aesthetic experience. As R. Murray Schafer, the gifted Canadian composer and creative teacher has pointed out, interdisciplinary programs of study are vital and desirable in order that music [and the related arts] may be forced out of the isolated and departmentalized restraints in which educators so effectively placed them many years ago.[2]

A cursory view of the contemporary arts would affirm that many of today's creative artists are no longer limited to specific categories. Instead, the innovative artist is seeking avenues that link the aural and visual continuum which abrogates spatial versus temporal art. Furthermore, recent efforts and studies by Gerard Knieter[3] of Temple University and Paul Haack[4] of the University of Kansas, as well as others, provide some evidence that a multi-media presentation of the arts enhances significantly the development of aural perception and an understanding of music and the related arts within students. Yet, as aesthetic education, the integrated arts curricula can stimulate and identify with an even greater responsibility — the contributing to basic human needs.[5] As such, the course is designed to: (1) foster aesthetic sensitivity and understanding, (2) to develop and refine sensory perception, (3) to encourage individual creativity, (4) to actualize human potential through the functional use of sensory inputs, (5) to focus on uniqueness of individual expression, (6) to encourage a more affirmative understanding and relationship with mankind, and (7) to develop interlockng cooperative and collaborative skills in order that the student may function more realistically and effectively in a changing environment. Therefore, many integrated arts endeavors attempt to reflect the following attributes:[6]

1. To discover and study the basic components of the arts.
2. To develop an awareness of the role of the arts within a culture based on the values and achievements of the past and the present with an examinaton of possible future artistic trends.
3. To make the curriculum offerings more relevant to student needs and desires.
4. To develop basic skills in non-verbal communication and psycho-motor skills.
5. To develop self-actualization and to broaden individual freedom by granting greater responsibility to the individual student with opportunities to explore space and time relationships.
6. To assist the student to adjust and adapt in a viable world community.

This fusion of the arts, therefore, is an attempt to develop a more effective and balanced course of study to foster aesthetic sensitivity and understanding, social conscience, and the emancipation of human potential.

Purpose of the Study

As curriculum reforms became more rigorous during the 1950's and 1960's, music education, i.e., the *Music Educators Journal,* the Yale Seminar on Music Education, and the Tanglewood Symposium, to name a few, began to question the role of music in the schools and its relationship to society. The American Council of Learned Societies stated in its 1958 *Newsletter,* "Secondary School Curriculum Problems," a series of specific weaknesses existing in our high school music programs:

> 1. Too often the high school music program consist[s] of band, orchestra, and chorus, enrolling only students with musical aptitude and talent.
>
> 2. . . . tendency to overstress certain activities of questionable musical value . . . marching band . . . needed to be de-emphasized and placed in the category of an extracurricular activity . . . also question the value of competitive festivals.
>
> 3. . . . little opportunity is provided for the 20 to 80 per cent of the student body who may not be interested in musical performance, but who are all potential consumers of music.

4. . . . need for more emphasis on development of musical skills and less teaching by rote.[7]

Leon Karel emphasized the need for curriculum reform in music education by voicing the following school arts program defects:

1. The arts are divided and compartmentalized to the point where they are almost total strangers to one another.

2. The arts teach performers. Non-performers find little or no opportunity for arts experience.

3. The arts, particularly music, exploit students. The student serves the musical organization when it should serve him.

4. The arts as an entertainment feature of the curriculum are governed by "what the people want."

5. The arts fail to challenge the best in the student. Music education is dependent on patterns established many decades ago. Failure to hold students in the music curriculum documents the failure to meet student needs.[8]

Frequently, references such as Jipson's "The Other Eighty-five Percent"[9] allude to the 80 to 85 percent of the American secondary school population who are reportedly not enrolled in the performance-oriented curriculum. An analysis of this factor could pose the statement that perhaps this portion of the secondary school population is not interested in performance. This, in turn, suggests a question: Is music education not committed to music and the related arts as a way of life? As Bennett Reimer relates, music education has failed to solidify its position about the fundamental nature of music.[10] To alleviate this singular approach (performance) to music, music and the related arts in striving for a more pertinent and well-rounded arts curriculum, have been increasingly motivated toward an integrated arts concept of education which provides aesthetic experiences for the non-performer as well as the performer. Harold Taylor has observed:

> This means the engagement of students in the practice of the arts themselves and the confrontation of students with genuine issues involving genuine intellectual, moral, and aesthetic options. The student must face the fact it is he who must decide the character and quality of his own response to an object of art; it is he who must judge the worth of an idea within a framework of his own values, a framework he must learn to construct for himself.[11]

Yet, a review of the current structure of music education in the schools has led the Manhattanville Music Curriculum Program to raise this thought-provoking question:

> Have you ever considered that most students never have the chance to exercise musical or artistic judgment in the classroom."[11]

In view of these developments, this study was undertaken to communicate a perspective of the integrated arts in American secondary education.

Definition of Terms

Aesthetic education is the examining of the relationship of the arts to the human intellect and senses. It is the process that enables man to develop his capacity for expression in the arts (creating, performing, and/or responding) thereby cultivating aesthetic sensitivity — the capacity to respond to the emotional and cognitive meanings of organized design."[12]

Humanities are verbally-based in the fields of English, history, ethical, and social and moral values.

Integrated arts, commonly called Allied Arts or Related Arts, are identified as the correlation of non-verbally based subject matter or experiences which are aesthetically-oriented, e.g., music, painting, sculpture, architecture, and dance. In Missouri, the integrated arts concept is generally known as the Allied Arts.

Humanities, Integrated Arts, and Aesthetic Education — A Delineation

In the investigation of the status of the integrated arts in secondary schools of Missouri, it became abundantly clear that courses entitled "Humanities" and "Allied Arts" failed to specifically identify inherent characteristics that are unique to each. In addition, educational philosophy has neglected to precisely define those factors that distinguish the "humanities" concept from the "integrated arts-allied arts-related arts" approach. Therefore, the following is designed to delineate the precise nature and variations of a humanities versus an integrated arts course of study.

Education is the changing of behavior selectively. As Knieter suggests, the responsibility of music and related arts education lies in the area of aesthetic behavior for the development of aesthetic sensitivity is unique to the arts.[14] In addition, Reimer offers seven major behavioral categories relevant to the arts and aesthetic education: (1) perceiving, (2) reacting, (3) producing, (4) conceptualizing, (5) analyzing, (6) evaluating, and (7) valuing.[13] Aesthetic encounters may be experienced in many diverse ways. For example:

1. Responding to aesthetic qualities in objects or events by means of *reading,* e.g., poetry; *listening,* e.g., music; and/or *viewing,* e.g., painting.

2. Producing objects or events which contain aesthetic qualities by means of *composing/creating*, e.g., music, poetry, painting, and/or *performing*, e.g., music, dance."[16]

Reimer reminds us that "one cannot become more aesthetically sensitive to sounds, to colors, to shapes, to movements, to verbal images, to spaces, to actions."'[17] Therefore, aesthetic education is the development of the human intellect and senses within the arts. According to Karel, it was not until the 1960's that education began to consider this important obligation — the cultivation of skills necessary for aestetic awareness.[18]

Knieter has condensed the philosophical and psychological data relating to the aesthetic experience into five intrinsic categories:

1. *Focus*. This element is directional and attentional. It requires that the individual must have a psychological encounter with the aesthetic object, e.g., painting or music. The experience must be more than vicarious exposure.

2. *Perception*. The process in which data from the senses are utilized. Aesthetic education deals with the cultivation of perception —the organizing of space perceptually. The visual and auditory senses must understand patterns and relationships.

3. *Affect*. This factor refers to feeling. Aesthetic experience requires the individual to move from predisposition to a profound emotional encounter.

4. *Intellect*. This process is applicable to cognition. It is a factor that is often overlooked, for arts education has erroneously assumed that understanding is dependent on extensive psycho-motor skills.[19]

5. *Cultural*. Arts are not absolutes aesthetically; they are culturally-based. The perceiver must recognize that the artistic outgrowths of one culture may not and generally do not share an identical aesthetic base with another culture.[20]

Thus, it may be stated that the collaboration of these five factors into a systematic educational process should significantly enhance achieving the following:

> The general goal for aesthetic education is to cause the student to increase his capacities to experience aesthetic qualities in man-made and natural objects and events in his environment.[21]

As Nye suggests, contemporary education operates in three domains" — the affective, the psycho-motor, and the cognitive.[22] The arts possess a compatible relationship with all three areas, but education has neglected to commit itself to the affective element — that which is most directly related to aesthetic education.

> Because it is apparently easier to transmit the cognitive, the schools have not appreciably increased their effectiveness in consciously influencing the effective aspects of the lives of students. Music education [and the related arts are] . . . possible means of reaching students and of adding a dimension to their lives. However, to do so effectively involves reaching the entire being of the student and not simply his cognitive faculties. The student must *feel* as well as think."

Furthermore:

> In education of this nature children not only learn to feel but also to understand why and what it is they feel. Educators must accept the responsible role of teaching how to think about art, not what to think; . . . "

Affective development, therefore, is the process identified with feeling." To develop cognitive skills alone fails to sharpen the students' faculties so essential to the nourishing of active, thoughtful and creative ways for coping with a complex environment." Huw Morris-Jones expresses another critical view when he states:

> In a cognate way different art-forms are also specialized "languages;" that is, they also reflect culturally determined ways of thinking and feeling limited by the expressive scope of the symbolic media they use . . . Musical feelings are different from sculpture feelings."

Therefore, the nature of music and the related arts experience may be categorized as an experience of feelings.

> The major function of aesthetic education is to make accessible the insights into human feelingfulness contained in the aesthetic qualities of things. Aesthetic education, then, can be regarded as the education of feeling."

The significance of the integrated arts concept is the realization that its potentialities contribute to aesthetic education; the cultivation of another dimension within the school curriculum congruent with aspects of "feeling" as it relates to personality and learning. It is this central factor of "feeling" that nullifies the humanities approach as an adjunct to aesthetic education. As currently structured, the humanities fail to embrace this form of inquiry ("feeling"), and as such, suffer a dearth of aesthetic endeavors. Fundamentally, "art history" and "arts and humanities" courses remain as history and humanities, and fail to develop in students an understanding of the affective nature of art works." Furthermore, the humanities concept tends to:

> . . . subvert the aesthetic aspects of the arts because they

> treat the arts in broad categories which fail to capture the particulars on which aesthetic experience depends. Frequently, the arts are reduced to illustrating moral issues and dilemmas of life, or giving factual information."[30]

Guidelines: Curriculum Development for Aesthetic Education offers additional analysis of the humanities curricula:

> The humanities are concerned with ethical problems. In humanities programs, the arts tend to be used as data to examine values that motivate human conduct. Ideas about these values take precedence over the influence of media and forms on man's aesthetic experiences . . . The humanities teach ways that problems and ideas about life can be perceived and imagined. Aesthetic education shows how such problems and ideas can be experienced, expressed, enjoyed, or made tolerable."[31]

In evaluating the effectiveness of the humanities approach versus the integrated arts concepts as it relates to aesthetic education, Jorgenson suggests that the integrated or related arts presentation is more practical

> . . . with its limited objectives of relating principles, concepts, and critical judgments in the application of the senses to both artistic perception and the solution of contemporary aesthetic problems."[32]

The complexity of the humanities and the integrated arts concept can be unraveled by reviewing the outcomes of an investigation of the humanities movement in education. This study pointed to five influences regarding the humanities in secondary education: (1) The Commission of the Humanities, (2) The John Hay Fellows program, (3) the *English Journal*, (4) the United States Office of Education, and (5) Encyclopedia Britannica Films. Two primary purposes of humanities programs were said to be the transmittal of cultural heritage and the humanization of the individual. The objectives of the transmittal of cultural heritage were characterized as: (1) valuing knowledge for its own sake, (2) mastery of intellectual disciplines, and (3) need for knowing about great men and ideas of the past. Objectives relating to the purpose regarding the humanization of the individual were categorized as: (1) need for the process of becoming, (2) discovery of personal identity, (3) opportunity for students to engage in self direction, (4) need for problematic learning, and (5) unity of knowledge.[33]

Thus, this educational trend becomes a historical and philosophical approach arising from the study of ideas, theories, and principles. The curricula structure becomes a platform for the dissemination of accumulated predetermined facts. As Karel has stated, the humanities incorporates the arts in historical eras for the illumination of man's heritage, his great ideas, and achievements.[34] As such, it dispenses *knowledge about* art and *does not* present the arts in a manner conducive to *experiencing* art.[35] Using art works as indicators of cultural mores, attitudes, and fashions, is readily acceptable within history and social science classes, but this cannot be construed as a factor in aesthetic education.[36] Broudy contends that:

> In aesthetic experience we perceive objects in order to grasp their sensuous characteristics and not *primarily* to further knowledge or useful enterprises. Aesthetic activity may accompany practical, moral, religious, intellectual, and social activity and enhance our enjoyment of them, but it is not to be confused with them.[37]

Schwadron provides additional insight:

> In painting, the virtual boundaries of [aesthetic] experience are marked by spatial limitations; in music, by temporal. As such, aesthetic experience is of importance for its own sake rather than the functional — social, moral, or political — purposes.[38]

Furthermore, Schwadron suggests that arts as "functional purposes are often aesthetically questionable."[39]

The structure of the course of study within the humanities generally relies on three basic approaches: (1) thematic or topical, (2) chronological or historical, and (3) unifying element approach. Wenner senses a number of cautions regarding a course of study that is committed to such a regimented presentation:

1. Art chosen to illustrate a theme such as love, hate, or war provides the student with no opportunity to experience or discover for himself; rather the student is "told" the contents of an art work.

2. Art selected to reflect a period in history is so chosen to "prove" superficial factual knowledge, thereby sacrificing aesthetic sensitivity. Furthermore, "art that does not express a particular period is excluded."

3. The presentation of elements that supposedly unify or are common to the arts, i.e., line, rhythm, structure negates the opportunity of exposing the student to those factors which are unique in each of the arts.[40]

Jorgenson stipulates a serious reservation relative to the humanities approach as it relates to aesthetic education when he states:

> The humanities courses — particularly the historically oriented course — usually assumes that the student will

> learn to make critical judgments in his own life from contact with historical masterpieces. This calls upon a philosophy of history that depends upon *transfer* and that few social scientists or historians will attempt to defend any longer.[41]

The purpose of this study is not to draw conclusions regarding the pros and cons of the humanities. It is important, however, that the true nature of the aesthetic content found in courses be exposed, and to determine whether or not these courses are committed toward educating a general audience in the affective role of the arts. A weekly newsletter, *Education U.S.A.*, recently offered a perceptive view of what humanities authorities defined as a new movement to replace the humanities of the 1960's. Allan A. Glatthorn, chairman of the Association for Supervision and Curriculum Development (ASCD) Commission on the Humanities, and principal of the Abington, Pennsylvania High School, remarked at the 1971 ASCD annual convention in St. Louis that humanities courses relying on lectures, films, and large group instruction are "the same old content in a different package."[42]

> Short-term elective courses in English, social studies, and other areas may make humanities courses redundant . . . In some schools the program of English electives is already undermining humanities courses for the same teachers are often involved in both programs.[43]

A new trend, affective education — focusing on feelings, values, emotions, and self-awareness will dislodge or reshape humanities offerings. The focus of the 1970's is directed toward humanizing the entire curriculum, rather than offering humanities courses.[44] Signs of change are already appearing: (1) more emphasis on films as an art form, (2) more attention to "third world" or minority cultures, (3) increasing efforts to focus on the present, not the past, (4) courses designed for all students, not just the college-bound, (5) students and teachers alike working collectively to create courses, and (6) replacing team-teacher-developed and book-oriented courses.[45] These changes reflect what Postman and Weingartner state:

> . . . the thrust of the "curriculum" . . . is to extend the child's perception of what is relevant and what is not.[46]

Gene C. Wenner provides an astute perspective in summation of the discussion supra:

> Humanities courses force art to conform to thematic, historical, or structural molds. Art that does not conform is ignored. Related arts courses, on the other hand, focus

> on the art works themselves, chosen on their merit alone. Since the art is not being used to illustrate a theme or historical movement, the students are freed to concentrate on understanding their response to art.[47]

> Most humanities courses are designed for the academically talented student, . . . As a result, humanities courses are usually verbally oriented and usually a "read-about" and "write-about" approach . . .
>
> The related arts or allied arts courses, on the other hand, are generally directed toward all students regardless of their academic or artistic background, that is, the eighty percent referred to at the Tanglewood Symposium.[48]

Finally, the differences encountered in developing an imaginative curriculum responsive to the cultivation of aesthetic sensitivity is no easy task and should not be minimized. If the curriculum

> . . . leans too heavily toward concept instruction then the skills developed are more the manipulation of concepts and it will probably lead more to the development of professional critics; if skill oriented, then it will more than likely become a program for developing artists; if only experiential then it would probably be more therapeutic than educational. The problem . . . is to maintain a balance of . . . concepts, skills, or experiences both as means and ends.[49]

Summary

Aesthetic education exemplifies the common bond shared by the individual fine art disciplines found in American education — the cultivation and development of the aesthetic experience and response, "feelingfulness," as it relates to the student's intellect and senses. From a point of view derived from the latter half of the twentieth century, the arts, unlike the humanities, are not social, ethical, or moral — they are aesthetic. The thrust, therefore, of aesthetic education is unique in that knowledge gained through aesthetic experience is characteristically nonverbal and personal. It is the development and understanding within man of the affective response toward aestheteic objects for which aesthetic education is ultimately responsible.

A fusion of the arts into a singular course of study has resulted due to a redefining and broadening of the role of the arts at all levels of education. This integrated arts approach is an effort to improve the potential of the arts in education, and to develop within the student increased sensitivity to, understanding of, and competence in aesthetic experiences.

FOOTNOTES

1 For three recent publications that dramatize this concept see Bennett Reimer, **A Philosophy of Music Education** (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1970); Abraham A. Schwadron, **Aesthetics Dimensions for Music Education** (Washington, D.C.: Music Educators National Conference, 1967) and **Toward an Aesthetic Education**, Report of an institute sponsored by CEMREL, Inc. Bennett Reimer, chairman (Washington, D.C.: Music Educators National Conference, 1971).

2 R. Murray Schafer, **Ear Cleaning** (Don Mills, Ontario: BMI Canada Limited, 1967), p. 2.

3 Gerard L. Knieter, "The Creative Arts Symposium," **Music Educators Journal**, XLIX (April-May 1963), 62, 65-66.

4 Paul Haack, "A Study Involving the Visual Arts in the Development of Musical Concepts," **Journal of Research in Music Education**, XVIII (Winter, 1970), 392-398.

5 Abraham H. Maslow, "Music, Education, and Peak Experiences," **Music in American Society**, Documentary Report of Tanglewood Symposium (Washington, D.C.: Music Educators National Conference, 1968), pp. 71-73.

6 For an illuminating discussion of the problems encountered in curriculum goals and objectives of this nature see David W. Ecker, "How to Think in Other Categories: The Problem of Alternative Conceptions of Aesthetic Education," **The Journal of Aesthetic Education**, IV (April, 1970), 21-36.

7 Earl V. Moore, "Report of Music Panel" in "Secondary School Curriculum Problems," **American Council of Learned Societies Newsletter**, IX (Fall, 1958), 17.

8 Leon Karel, "Teacher Education in the Related Arts," **Music Educators Journal**, LIII (October, 1966), 38-39.

9 Wayne R. Jipson, "The Other Eighty-five Percent," **Music Educators Journal**, LV (January, 1969), 35-36.

10 Bennett Reimer, "Curriculum Reform and the Junior High General Music Class," **Music Educators Journal**, LIII (October, 1966), 43.

11 Harold Taylor, "The Arts and the Humanities," **The Humanities in the Schools**, edited by Harold Taylor (New York: Citation Press, 1968), 22-23.

12 Funded by the United States Office of Education, the Manhattanville Music Curriculum Program is directed by Ronald B. Thomas, Manhattanville College, Purchase, N.Y.

13 The author wishes to credit Dr. Gerard L. Knieter, Chairman of the Department of Music Education of Temple University, for having influenced this definition.

14 Gerard L. Knieter, "Foundations of Aesthetic Education," (Lecture-demonstration presented to the Massachusetts Music Educators Association Conference, Plymouth, Mass., March 28, 1969).

15 Bennett Reimer, **A Philosophy of Music Education** (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1970), p. 154.

16 Manuel Barkan, Laura H. Chapman, and Evan J. Kern, **Guidelines: Curriculum Development for Aesthetic Education** (St. Charles, Mo.: Central Midwestern Regional Educational Laboratory, Inc., 1970), p. 10.

17 Reimer, op. cit., p. 143.

18 Leon C. Karel, "Allied Arts: An Approach to Aesthetic Education," **The Journal of Aesthetic Education**, I (Autumn, 1966), 111.

19 "To realize the aims of general education in music (and the related arts), we cannot rely upon instruction in performance skills per se as a means to full understanding of musical (and arts) content. To teach sensitivity to aesthetic content, we must rely upon other educational experiences than those of performance. Whatever the values of musical (or artistic) performance might be, we must recognize that performance is not a primary means to development of aesthetic sensitivity." Foster McMurray, "Pragmatism in Music Education," **Basic Concepts in Music Education**, Fifty-seventh Yearbook of the National Society for the Study of Education, ed. by Nelson B. Henry (Chicago: The University of Chicago Press, 1958), pp. 46-47.

20 Gerard L. Knieter, "The Nature of Aesthetic Education," **Toward an Aesthetic Education** (Washington, D.C.: Music Educators National Conference, 1971), pp. 3-8.

21 Barkan, Chapman, and Kern, op. cit., p. 12.

22 Robert Nye and Vernice Nye, **Music in the Elementary School** (3rd ed., Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1970), p. 3.

23 Carl J. Dolce, "School Administrators," **Music Educators Journal**, LVI (January, 1970), 63.

24 Abraham A. Schwadron, "Structural Meaning and Music Education," **The Journal of Aesthetic Education**, III (October, 1969), 121.

25 For an exposition of the theories of "feeling and emotion" as they relate to visual and auditory perception see Ronald W. Hepburn, "Emotions and Emotional Qualities"; Huw Morris-Jones, "The Language of Feelings"; and Harold Osborne, "The Quality of Feeling in Arts," **Aesthetics in the Modern World**, ed. by Harold Osborne (New York: Weybright and Talley, Inc., 1968). Another excellent reading is Chapter Three, "Art and Feeling," of Bennett Reimer's, **A Philosophy of Music Education** (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1970).

26 Harry Morgan, "The Curriculum Is the Self," **Music Educators Journal**, LVI (December, 1970), 27.

27 Huw Morris-Jones, "The Language of Feelings," **Aesthetics in the Modern World**, ed. by Harold Osborne (New York: Weybright and Talley, Inc., 1968), p. 102.

28 Susanne K. Langer, "The Cultural Importance of the Arts," **Aesthetic Form and Education**, ed. by Michael F. Andrews (Syracuse: Syracuse University Press, 1958), p. 8 quoted in or "cited by" Bennett Reimer, **A Philosophy of Music Education** (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1970), p. 39.

29 Pennsylvania Department of Education, Bureau of General and Academic Education, Fine Arts Division, "An Instructional Guide for a Course in the Arts in the Secondary Schools" (2nd working copy; Harrisburg, Pa.: Department of Education, 1970), p. 4.

30 Barkan, Chapman and Kern, op. cit., iii.

31 Ibid., p. 2.

32 Dale A. Jorgenson, "Preparing the Music Educator for Related Arts," **Music Educators Journal**, LVI (May, 1970), 62.

33 Warren Bruce Buford, Jr., "An Analysis and Design of Humanities Programs in Secondary Education" (unpublished dissertation, University of North Carolina, 1967). The material supra was obtained from Gaylord H. Farwell's review in Bulletin No. 17, Council for Research in Music Education, University of Illinois, Spring, 1969.

34 Leon C. Karel, "Allied Arts: An Approach to Aesthetic Education," **The Journal of Aesthetic Education**, I (Autumn, 1966), 113.

35 Bennett Reimer, **A Philosophy of Music Education** (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1970), p. 148.

36 Ibid., 148.

37 Harry S. Broudy, "A Realistic Philosophy of Music Education," **Basic Concepts in Music Education**, Fifty-seventh Yearbook of the National Society for the Study of Education, ed. by Nelson B. Henry (Chicago: The University of Chicago Press, 1958), p. 69.

38 Schwadron, op. cit., p. 111.

39 Ibid.

40 Gene C. Wenner, "The Use and Abuse of Interdisciplinary Arts Courses," **Music Educators Journal**, LVI (May, 1970), 63-65.

41 Jorgenson, loc. cit.

42 National School Public Relations Association, Weekly Newsletter on Education Affairs, **Education U.S.A.**, March 15, 1971 (Washington, D.C.: National School Public Relations Association, 1971), p. 151.

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[43] Ibid.

[44] Ibid.

[45] Ibid.

[46] Neil Postman and Charles Weingartner, Teaching As a Subversive Activity (New York: Delacorte Press, 1969), p. 61.

[47] Wenner, op. cit., p. 63.

[48] Ibid., p. 66.

[49] Stanley S. Madeja and Harry T. Kelly, "A Curriculum Development Model for Aesthetic Education," The Journal of Aesthetic Education, IV (April, 1970), 61.

DISSERTATION ABSTRACTS

ABSTRACT

A BASIC METHOD OF GROUP INSTRUCTION FOR BEGINNING CHURCH ORGANISTS

Sister Dorothy Venhouse (S.S.N.D.) Ed.D., 1971
Washington University

The main objective of this paper is the development of a method of group instruction for beginning church organists. It presents an attempt to fill the need for materials and procedures which can be used to help future organists gain proper skills and abilities in order to develop the musicianship and discrimination necessary for proper fulfillment of music as a functional aid to worship.

The pertinent psychological learning and instructional theories of Bruner and Woodruff are examined. Bruner's four main themes of structure, readiness, intuition, and interest are applied in the construction of this method. A spiral curriculum based on the structural dimensions of music (pitch, duration, timbre, loudness, simultaniety, form, and style) is developed in six cycles. These dimensions are analyzed in the music which is presented for study, with each cycle containing representative pieces from each of the historical stylistic periods.

Woodruff's instructional theories are adapted in the separation of musical concepts and skills into verbal and non-verbal objectives. The planning and stating of objectives and strategies for each cycle is presented in behavioral terms according to the type of response expected.

It is hoped that the group method presented will enable the student to perform skillfully and in good taste; to understand the prin-

ciples of good organ technique and appropriate registration; to become aware of the literature available in the various stylistic periods through a variety of musical compositions; and to learn the essentials of music and music's development as an art so that his powers of musical discrimination in choice and interpretation of literature may be improved.

ABSTRACT

AN INVESTIGATION OF THE VIBRATING CLARINET REED UTILIZING HIGH SPEED CINEMATOGRAPHY

Roger Dean Coppenbarger, D.M.A.

University of Missouri at Kansas City, 1970

Problem

The goal of this project was to investigate the behavior of a vibrating clarinet reed. Not only a tone in a steady state, but a variety of pitches were investigated in varying conditions of manipulation, such as small and large interval changes. An effort was made to correlate the sound with the reed movement by means of physical evaluation and harmonic wave analysis.

Experimental Procedure

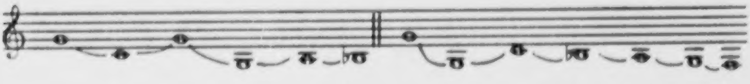
A mechanical apparatus was assembled to manipulate the clarinet. This design consisted of a glass enclosure, artificial embouchure, and an air supply system. This apparatus allowed for a controlled air pressure of 9-11 oz. and a constant controlled embouchure pressure and placement.

Photography. The clarinet reed's movement was photographed utilizing a variety of techniques:

Set I — Shadow Photography at 2,800 to 7,000 frames per second of the mouthpiece and reed (side view) sounding tones in a steady state.

Set II — Direct Photography at 5,000 per second.

Set III — Streak Photography at 300 frames per second (time resolution compared to 11,000 frames per second) of the mouthpiece and reed tip in a continuous recording movement along a slit versus time. The streak content was of (1) the reed and mouthpiece without sound, (2) the reed and mouthpiece without sound, but with playing embouchure pressure, and (3) the reed's behavior while playing the following notes.



Set IV — Direct and Oscilloscope trace photography combined at 2000 frames per second of the mouthpiece and reed (side view) sounding (a) low G, (b) a slurred scale from low F up to throat B flat, and (c) a slur from low E to low G up an octave to open G.

Results

The reed vibrates at the same frequency as the pitch of the tone (Sets I and II), creating a gap between the reed and mouthpiece from the tip back to the embouchure. The opening of the reed does not cause a flex beyond a straight line.

The embouchure pressure required (Set III) reduced the mouthpiece reed gap 43% from its non-pressure measurement. In a steady tone, the tip of the reed's excursion is further reduced (a Bernoulli effect is created) which is constantly pulling the reed toward the mouthpiece lay. The mouthpiece-reed gap closes completely about 40% of a cycle — never more than 45%. The wave form of the reed-tip's movement tends to be an asymmetrically square wave, but not a pure square wave due to the opening and closing time. When the reed is open it is not in a static state. During a slur between two tones the wave form changes to a sinusoidal shape, often with a high frequency vibration superimposed upon the fundamental. The dampened reed's natural frequency was between 3,300 to 3,600 cycles per second. The fastest speed of the reed's movement occurs just before closing resulting in a small rebound vibration. The reed reacted to a change in the tube length in .003 of a second, but it takes .057 of a second for a second tone to become stable in an octave slur and .010 of a second for a whole step slur. One harmonic analysis of the reed reveals that a normal vibration had about nine significant harmonics. The odd harmonic a twelfth above the fundamental had the greatest amplitude other than the fundamental. The sinusoidal wave forms that occur between stable pitches usually have one to three harmonics with the even harmonics an octave above the fundamental the strongest harmonics.

The harmonic content (Set IV) of the tone sound waves analyzed was below 4000 cycles per second and much more complex than the reed's harmonic content. Low tones had more harmonics than high tones. The general pitch of the second slurred note is established before its harmonic content becomes stable.
Order No. 71-03689

ABSTRACT

A STUDY OF INTERVIEWING PRACTICES AND TECHNIQUES UTILIZED IN THE SCREENING OF PROSPECTIVE MUSIC PERSONNEL IN DEPARTMENTS OF MUSIC IN INSTITUTIONS OF HIGHER EDUCATION

Joseph M. Hegstad, Doctor of Musical Arts
University of Missouri-Kansas City, September 1, 1970

Order No. not yet available

This study was undertaken as an investigation of current interviewing practices utilized in the screening of candidates for music positions in college and university departments of music, as well as relating principles of interviewing techniques currently being employed in the fields of personnel management and personnel psychology to the employment practices of the college or university music department.

A questionnaire survey was taken of selected music department chairmen in universities and colleges across the United States. This survey together with the research of interview literature available in the fields of personnel management and personnel psychology, provided the writer with a duality of information from which to construct guidelines and recommendations for the interviewing of music candidates.

The research of literature in personnel management and personnel psychology revealed several ideas which tended to isolate major factors on which, to a large degree, the success of the interview depended:

1. Personal bias on the part of the interviewer should be eliminated, as much as possible, from the interview process.
2. The interviewer should utilize a consistency of approach with regard to each different candidate.
3. Interview material cannot be consistently dealt with in the interview without some type of structured or patterned approach.
4. The form of the question asked by the interviewer can significantly affect the interviewee's answer.
5. The interviewer's overt attitude toward the interviewee's responses can significantly affect the quantity and quality of information obtained during the interview.

It was found, in the data procured from the questionnaire survey of the college and university music department chairmen, that the

personal interview, as it is conducted by the chairmen, appeared to have unique strengths which seemingly set it apart from the interviews conducted in business and industry.

1. The extensive utilization of multiple interviewing techniques in the selection of music personnel — at least 2 or more individuals designated as interviewers met the music candidate for the purposes of assessment and appraisal.
2. Panel interviewing, while not widely employed among music department chairmen, nevertheless sustained greater usage in the field of music than was evidenced in business and industry.
3. Music department chairmen, if they so choose, have the additional perspective of musical performance from which to evaluate the candidate's abilities.

Weaknesses which the writer felt impaired the efficiency of interviewing as conducted by the music department chairmen were found to be the need for:

1. more structured or patterned interviewing techniques.
2. familiarity with judgment errors, such as false stereotyping and bias.
3. increased knowledge concerning non-directive interviewing techniques.

By combining the extensive research source in business, industry, and psychology with the information procured from the survey of music department chairmen, this study presents guidelines and recommendations which may help point the direction toward more effective techniques in interviewing music candidates.

ABSTRACT

A STUDY OF REHEARSAL TECHNIQUES FOR SYMPHONIC BAND

William Nolley Vereen, Jr., D.M.A.
University of Missouri — Kansas City, February 28, 1968

On the basis of a survey of the literature conducted by the author, it was concluded that rehearsal techniques for symphonic bands were not codified in one specific source. A basic list of two-hundred-seventy-five rehearsal techniques was discovered from utilizing this survey and interviewing band directors, music teachers, and college professors.

A questionnaire, containing twenty-two multi-part questions found to be most pertinent for good rehearsal techniques of symphonic bands and designed to reflect the relative importance of each item for rehearsal techniques was evolved and mailed to one hundred seventy-five experienced and reputable band directors throughout the United States. From the eighty-two percent return of the Questionnaire, grade-level categories of the respondees were formulated, i.e., Elementary, directors who were concerned with teaching intermediate and advanced students; and College, directors who were responsible for teaching college students. A statistical analysis was made for each item according to grade-level category including an All-Level category.

Although each question was believed to be an important factor for rehearsal technique of symphonic bands by the respondees, there was some disagreement among grade-level categories as to the relative importance of some items. An In-depth Study of the results of the Questionnaire was made in order to define why differences of opinion existed. The In-depth Study was mailed to twenty select band directors throughout the United States; and, while there was only a fifty-two percent return, each grade-level was equally represented by the respondees. Each recipient was asked to submit reasons why he thought differences of opinion existed. A comparison of the In-depth Study and Questionnaire results was made in order to clarify the relative importance of each technique according to grade-level category.

The results of the research (1) collate and codify items believed to be most important to rehearsal techniques of symphonic bands, (2) furnish statistical analysis of each item by grade-level category, (3) isolate possible curricula content for educational method courses utilized in the teaching of future band directors, and (4) contain neuristic value for future research relative to specific items concerned with rehearsal techniques of symphonic bands.
Order No. 68-15222

ABSTRACT

A STUDY OF THE APPLICATION OF CREATIVITY IN THE TEACHING OF SECONDARY SCHOOL MUSIC

Elwood H. Brown, D.M.A., 1968

The study is divided into two major sections. The first section, in general, is concerned with the general nature of creativity as it is known in the field of education today. Background is presented concerning thinking in the area of creativity today with some reference made to those personalities involved most prominently with the creative process in the theory and methodology of the current educative processes.

In defining creativity, an attempt is made to clarify the term in terms of music education and education in general to include the distinguishing of creativity in modern educational thinking as a process which is centered in the concept of problem-solving. As an elaboration is attempted of the implications of the process, it is related to basic concepts of music learning. Methodology is implied which can be implemented in the teaching of secondary school music from the standpoint of meaningful experiences and truly *music learning*.

As a part of the background for exploration of the general nature of creativity, an overview is presented of the philosophical backgrounds and implications for creativity as expressed by those philosophers and philosophies which most nearly approximate the theories and methodology of creativity as an educational process. An emphasis is placed upon the thinking of the pragmatic school which seems to be very much in accord with the principles and ideals of the creative process.

An overview of the psychological principles involved in creativity and the practice of creativity as a method or process is presented along with pertinent theories and principles of learning creativity.

The second section of the study is concerned with relating the general presentation of creativity to music education. An attempt is made to indicate how creative methodology can be applied to the teaching of secondary school music. While the material presented relates somewhat to all areas of secondary school music, the writing is slanted toward the vocal-choral area with which the writer is most familiar. An attempt is made to relate principles of a creative philosophy to principles of music education philosophy; principles of a creative psychology to principles of music and music education psychology. Methods, procedures, and principles of creativity are presented which have significance for music education relating how these methods, procedures, and principles may be applied in a general sense to the teaching of and performing of secondary school music for improved *music learning* and more meaningful experiences.

The thesis implied is that music directors are not providing for a meaningful experience with music at the secondary level particularly in the performance area. This has been attempted to be corroborated through a discussion of findings of a questionnaire sent to various high schools throughout the United States to ascertain the expected status of current practices in secondary school music teaching. The questionnaire was also designed to ascertain whether music educators in high schools and colleges throughout the country were aware of the creative process and creative methodology as an avenue of approach for more meaningful teaching of music in the school. Through example and through alluding to implications, it is shown how the creative process can be implemented as a worthy teaching procedure for enriching the musical learnings in the secondary school music curriculum.
Order No. 68-15219

ABSTRACT

MUSIC DEPARTMENTS OF COLLEGES OR UNIVERSITIES AND PUBLIC SCHOOLS — INTERRELATIONSHIPS

Jesse Laurence Peterson
University of Missouri-Kansas City

There is a basic interrelationship between the college or university music department and those of the area public schools. This relationship may exist at many levels, ranging from complete harmony to open hostility. Most college and public school music departments desire a good interrelationship, but frequently many problems exist between the two institutions.

The purpose of this study is three-fold: (1) to examine the methods employed by various colleges in establishing better interrelationships between themselves and their area public schools; (2) to design a program to develop better interrelationships between the Conservatory of Music of the University of Missouri at Kansas City and the public school music departments in the greater Kansas City area; (3) and to inaugurate a pilot study at the Conservatory of Music of the University of Missouri at Kansas City to correspond with the designed study.

The writer visited ten college campuses in California, Michigan, Missouri, and Kansas and interviewed the music administrator in each institution. The purpose of these interviews was to learn of the nature of the interrelationship existing between the music department of the college and its area public schools.

Following the interviews, a questionnaire was designed to further examine interrelationships between the college and high school music departments. This instrument was sent to one hundred music administrators.

The interrelationship of the Conservatory of Music at the University of Missouri at Kansas City and the public school music departments in the greater Kansas City area was examined in detail. The writer interviewed many Conservatory graduates and area public school personnel. The information yielded by the questionnaire and the interviews with college administrators was compared to the practice of the Conservatory.

With the information gathered, the writer designed a program to maintain and improve the relationship of the Conservatory to the public school music departments. This program included communication with both the public school teacher and student. There were personal visits of the college faculty to public schools and of the public school faculty to the college campus. Communication was emphasized at all levels.

Another aspect of the pilot program was a series of clinics. These included a percussion festival, a conducting clinic involving both students and teachers, and a choral clinic. A total of more than 1,150 persons from the public schools attended these sessions.

There was an evaluation attempted at the close of the first year of the pilot study. This revealed a significant change in the attitude of both the area public school directors and the Conservatory faculty. This program would appear to have a real potential for developing a meaningful interrelationship between the Conservatory of Music of the University of Missouri at Kansas City and the public school music departments in the greater Kansas City area.
Order No. 68-15221

ABSTRACT

SERIAL COMPOSITIONS FOR BAND

by Robert Lowell Casey, Ed.D.
Washington University, 1971

The purpose of this study is to describe, through detailed analysis, those serial techniques which have been used in selected compositions for the wind band and to compare the procedures found in these works with developments in serial composition in general.

It is shown that some forty years passed from the time of Arnold Schoenberg's first completed efforts in serial composition until the appearance of the first published works in this idiom for the wind band. It is recognized that the development of serial techniques has been one of the most significant developments in twentieth century composition and that this fact, together with the fact that the wind band exists in the United States primarily in the miliu of the educational system, created a need for works written in the serial idiom to be made available for performance and study. It is also recognized that current trends in music education emphasize the need for the development of analytical and cognitive skills, in addition to those skills concerned directly with performance, and that a sufficiently large body of band works in the serial idiom has just recently become available, making such a study now possible. In light of the current theory and practice in music education and the unfamiliarity with the idiom on the part of many band directors, the need for such a study becomes readily apparent.

A historical synopsis of some of the more salient points in the development of serial techniques from the early works in this style by Arnold Schoenberg (1874-1951) through both, the American and European movements toward "total organization" is included.

Seven works were selected for analysis as follows: William Latham's "Dodecaphonic Set," Frank Erickson's "Earth Song," Hale Smith's "Somersault," Herbert Bielawa's "Spectrum," Gunther Schuller's "Meditation," Karel Husa's "Music for Prague, 1968," and George Rochberg's "Apocalyptica." The latter piece is included in the study to show the serial influence on the work of a composer who formerly was considered a member of the "twelve-tone school" and who has since avowed rejection of the system.

It is shown that most of the pieces analyzed employ techniques which were formulated early in the development of the system, making little use of technical advances in the system beyond the so-called "classical" procedures. Exceptions to the foregoing, however, appear in Gunther Schuller's "Meditation," where the succession of transposition levels is controlled by the intervallic succession of one form of the pitch set, and in the third movement of Karel Husa's "Music for Prague, 1968," in which serial techniques are employed to control non-pitch parameters.

This study is intended to provide the requisite information and insight into serial compositional techniques for the band director to perform and teach successfully compositions written in this idiom.

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